

CEILING EXHAUST FAN

READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel-burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.

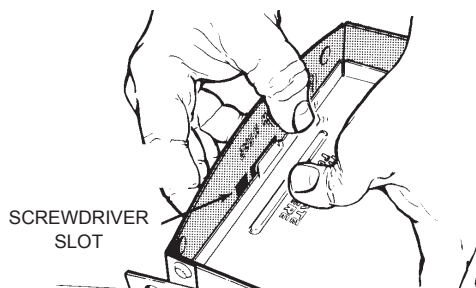
WARNING

5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. This unit may be used over a tub or shower enclosure when installed in a GFCI protected branch circuit.
8. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application.
9. Never place a switch where it can be reached from a tub or shower.
10. This unit must be grounded.

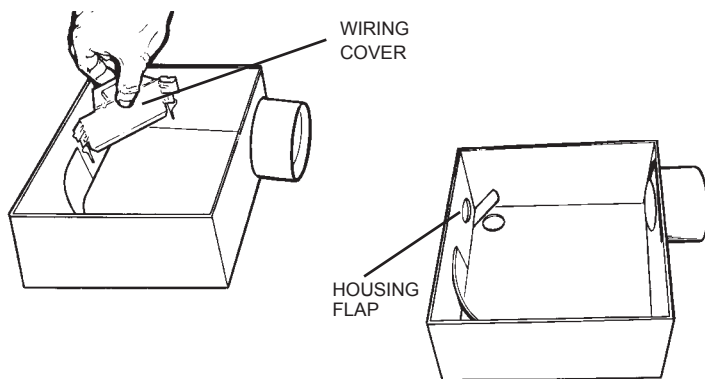
CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
3. Please read specification label on product for further information and requirements.

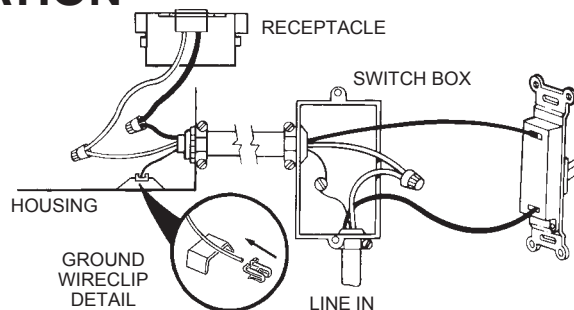
INSTALLATION



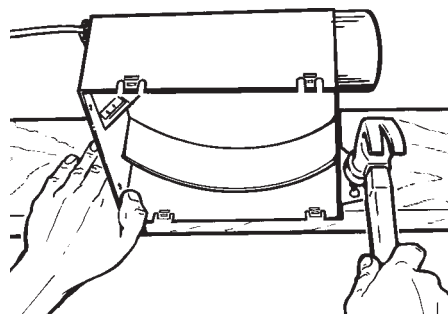
1. Remove motor plate from housing by pushing down on rib in plate while pulling out on side of housing. Motor plate may also be removed by inserting a straight-blade screwdriver into slot in housing and twisting screwdriver.



2. Remove wiring cover from housing by pulling straight out. Unit is shipped ready to wire through the top of housing. To wire through the side, bend housing flap to cover top hole and expose side hole. **DO NOT BREAK OFF FLAP.** If flap breaks, plug unused hole using standard electrical hole plug.

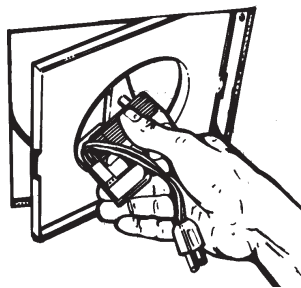


3. **Turn off electrical power at service entrance** and connect power cable to housing using appropriate connector. Wire black to black, white to white. Insert ground wire into grounding clip and secure to emboss in housing. Push all wiring up into corner of unit and replace wiring cover. Make sure cover holds housing flap in place against side or top of housing. **CAUTION: DO NOT ALLOW WIRES TO EXTEND OUTSIDE OF WIRING BOX. Wire left exposed will become pinched or cut when motor plate is installed. Electrical shock may result.**
4. Choose the location for your fan. For best performance, use the shortest possible duct run and a minimum number of elbows. For wall installations: Position unit so damper flap closes when unit is off.

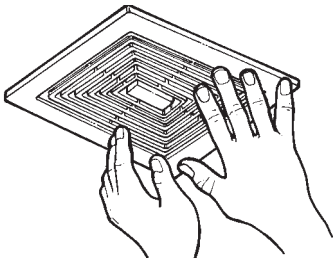
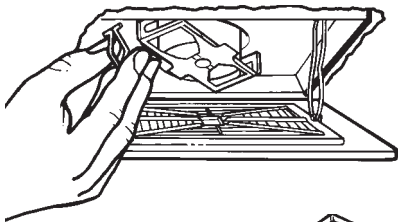


5. Use embossed measuring guides on side of housing to position housing for proper wall or ceiling thickness. **MAKE SURE HOUSING WILL BE FLUSH WITH FINISHED CEILING OR WALL.** Nail housing or stude joist using four nails to ensure a solid, quiet installation.

6. Install 3" round duct onto damper/duct connector. If rigid ductwork is used, its seam should be positioned at top of damper/duct connector. Tape the joint and extend ducting to a wall cap or roof cap. Make sure the damper operates freely. Ceiling or wall can now be finished.

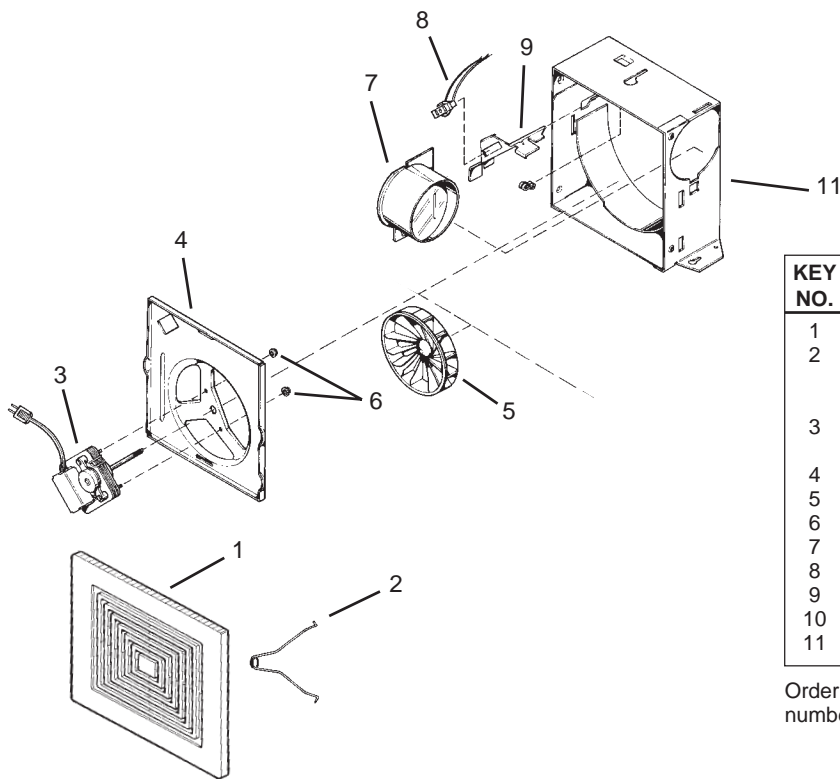


7. Replace the motor plate removed in Step 1. Insert two motor plate tabs into slots in housing and then pivot motor plate up until third tab on plate snaps into matching slot in housing. Make sure tabs hold motor plate securely in place. Plug in motor.



8. Squeeze grille springs together and insert springs into slots in motor plate. Push grille up against ceiling or wall.

SERVICE PARTS



KEY NO.	PART NO.	DESCRIPTION
1	99110752	Grille Only
2	99140137	Grille Springs (2 Required)
	97009346	Grille Assembly (Includes Key Nos. 1 & 2)
3	99080254	Motor (T050)
	99080265	Motor (T050EX)
4	98006791	Motor Plate
5	99110655	Blower Wheel
6	99260428	Nut #6-32 (2 Required)
7	97008632	Damper/Duct Connector
8	99270748	Receptacle
9	98006773	Wiring Cover
10	99390015	Ground Clip
11	97008319	Housing Assembly

Order replacement parts by part number - not key number.

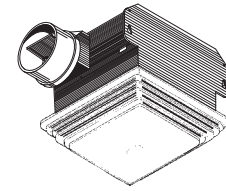
Limitation of Warranties and Claims

Seller warrants to the original purchaser that the goods sold hereunder shall be free from defects in workmanship and material under normal use and service (except in those cases where the materials are supplied by the buyer) for a period of one year from the date of original installation or eighteen (18) months from the date of shipment, whichever occurs first. The liability of seller under this warranty is limited to replacing, repairing, or issuing credit (at cost, F.O.B. factory and at seller's discretion) for any part or parts which are returned by buyer during such period provided that:

- seller is notified in writing within ten (10) days following discovery of such defects by buyer, or within ten (10) days after such defects should reasonably have been discovered, whichever is less;
- the defective unit is returned to seller, transportation charges prepaid by buyer.
- payment in full has been received by seller or said products; and
- seller's examination of such unit shall disclose to its satisfaction that such defects have not been caused by misuse, neglect, improper installation, repair, alteration, act of God, or accident.

No warranty made hereunder shall extend to any seller product whose serial number is altered, effaced or removed. Seller makes no warranty, express or implied, with respect to motors, switches, controls, or other components of seller's product, where such components are warranted separately by their respective manufacturers. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable to buyer for indirect, incidental collateral, or consequential damages of any kind. (BUYER'S FAILURE TO PAY THE FULL AMOUNT DUE WITHIN SIXTY (60) DAYS OF DATE OF INVOICE SHALL OPERATE TO RELEASE SELLER FROM ANY AND ALL LIABILITY OR OBLIGATION ARISING PURSUANT TO ANY WARRANTY, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, MADE IN CONNECTION WITH ANY CONTRACT FORMED HEREUNDER. BUYER AGREES THAT SUCH FAILURE TO PAY SHALL CONSTITUTE A VOLUNTARY WAIVER OF ANY AND ALL SUCH WARRANTIES ARISING PURSUANT TO SUCH CONTACT.)

CEILING VENTILATOR



READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

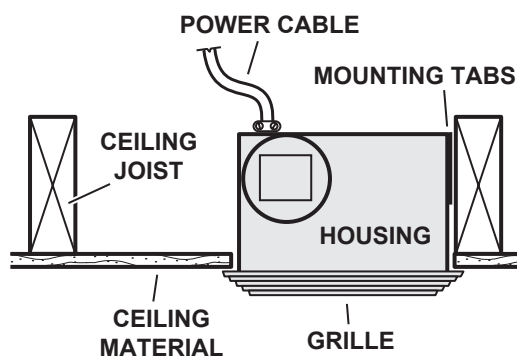
WARNING

6. Ducted fans must always be vented to the outdoors.
7. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Circuit Interrupter) - protected branch circuit.
8. Never place a switch where it can be reached from a tub or shower.
9. This unit must be grounded.

CAUTION

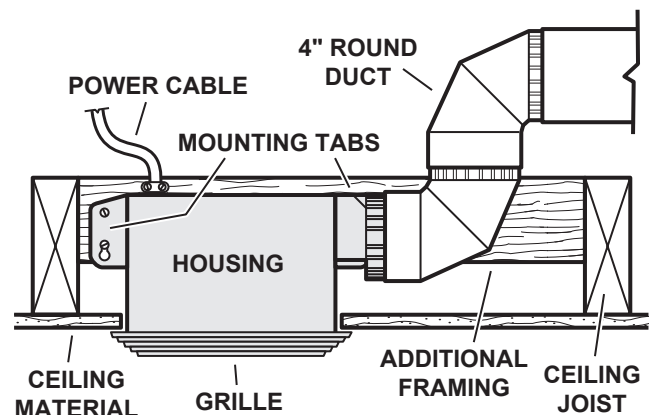
1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
3. Please read specification label on product for further information and requirements.

TYPICAL INSTALLATIONS



16"-ON-CENTER CEILING JOISTS
Housing mounted directly to joist.

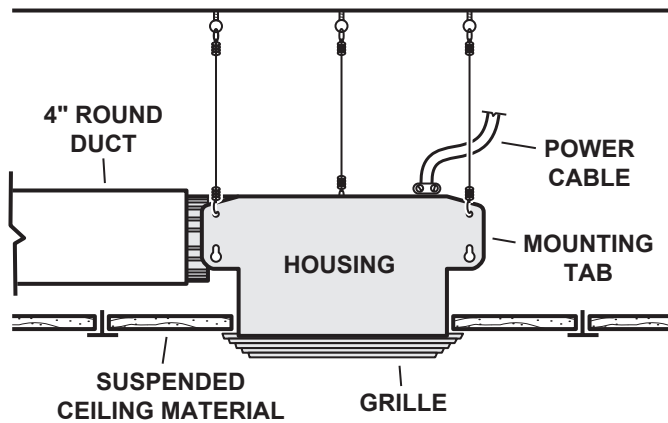
TYPICAL INSTALLATIONS



24"-ON-CENTER CEILING JOISTS
Housing mounted to additional framing.

Installer: Leave this manual with the homeowner.
Homeowner: Use and Care information on page 4.

TYPICAL INSTALLATIONS (continued)



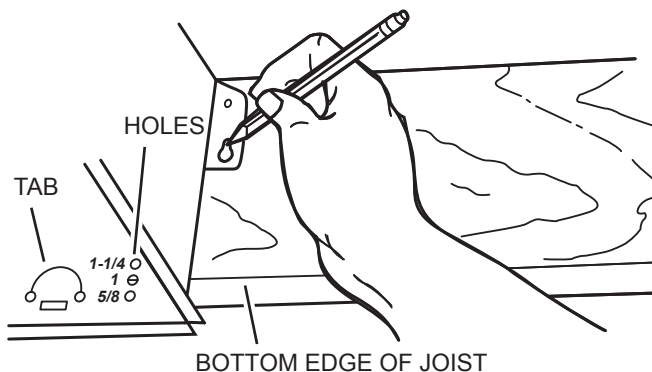
SUSPENDED CEILINGS

Housing hung with wires - 3-point mount.

INSTALL THE HOUSING

New Construction

1. Choose the location for your fan in the ceiling. For best possible performance, use the shortest possible duct run and a minimum number of elbows.



2. Position mounting brackets against joist so that bottom edge of housing will be flush with finished ceiling.

Additional positioning feature for 5/8", 1", & 1-1/4" thick ceiling material:

Holes in corners of housing are labeled with various ceiling material thicknesses. Position housing so bottom edge of joist is visible through a matched set of holes. The housing is now in the proper position for that ceiling material thickness.

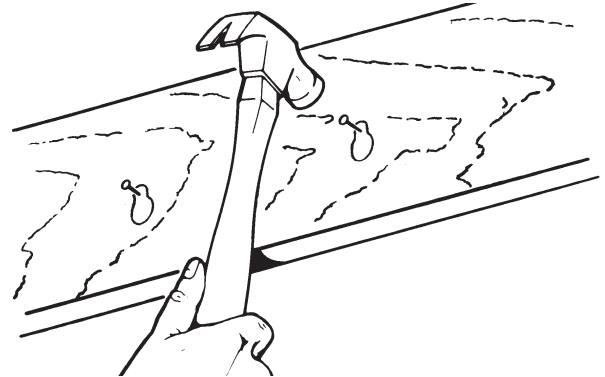
Additional positioning feature for 1/2" thick ceiling material:

Bend two tabs, on side of housing, 90° outward. Lift housing until tabs contact underside of joist.

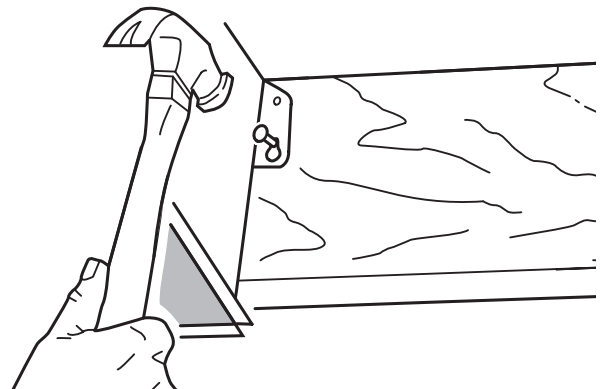
Mark the keyhole slot on both mounting brackets.

INSTALL THE HOUSING (continued)

New Construction



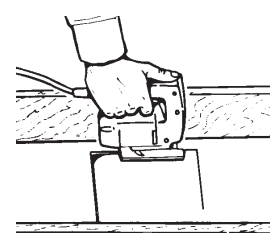
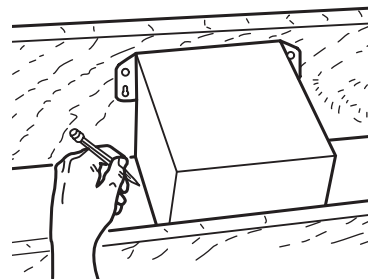
3. Set housing aside and drive nails partially into joist at the top of both keyhole marks.



4. Hang housing from nails and pound nails tight. To ensure a noise-free mount, pound another nail through the top hole of each mounting tab.

Existing Construction

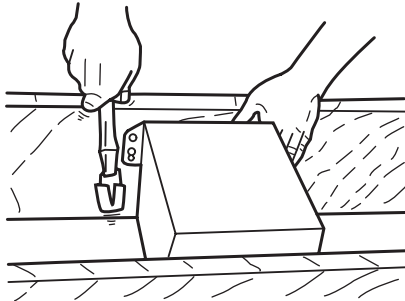
1. Choose the location for your fan in the ceiling. For best possible performance, use the shortest possible duct run and a minimum number of elbows.



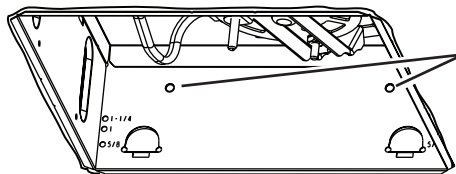
2. In attic, position mounting brackets against joist. Trace outline of housing on ceiling material.
3. Set housing aside and cut ceiling opening slightly larger than marked.

INSTALL THE HOUSING (continued)

Existing Construction



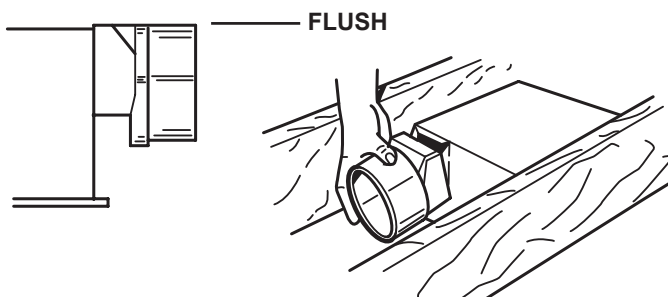
- Place housing in opening so that its bottom edge is flush with finished ceiling. Nail to joist through keyhole on both sides. To ensure a noise-free installation, drive another nail through the top hole of each mounting bracket.



ADDITIONAL
MOUNTING
HOLES

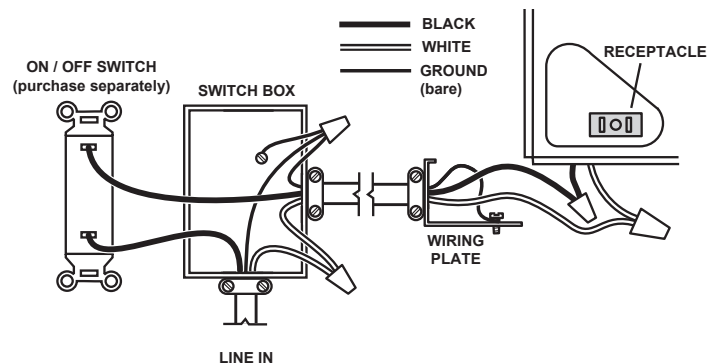
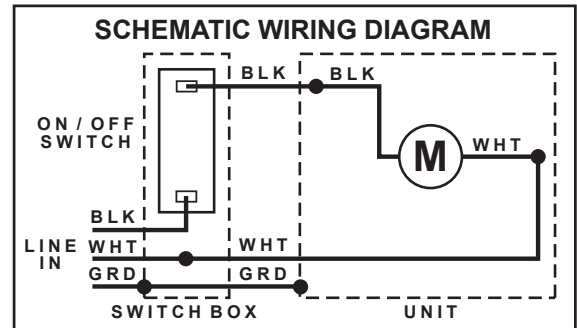
- Additional mounting holes are provided for installations where access from above is inconvenient or not possible. Nail or screw housing directly to joists or framing.

INSTALL THE DUCTWORK



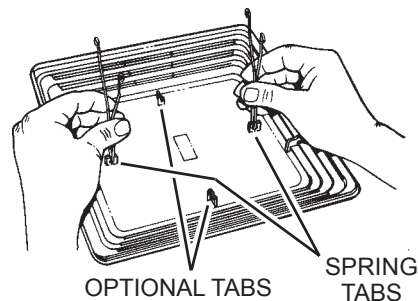
- Snap the damper/duct connector onto housing. Make sure that tabs on the connector lock into slots in housing. Top of damper/duct connector should be flush with top of housing.
- Connect 4" round duct to damper/duct connector and extend duct to outside through a roof or wall cap. Check damper to make sure that it opens freely. Tape all duct connections to make them secure and air tight.

CONNECT THE WIRING



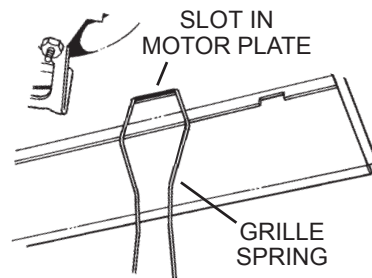
- Wire unit following diagram above. Run electrical cable as direct as possible to unit. Do not allow cable to touch sides or top of unit after installation is complete.

ATTACH THE GRILLE

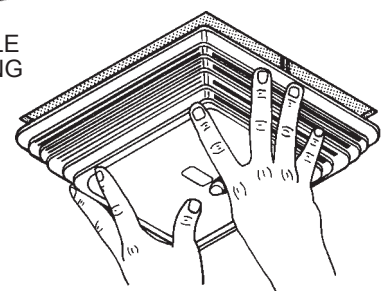


- Squeeze grille springs together and insert springs into slots in motor plate.

NOTE: If desired, rotate grille 90° and move springs to optional tabs.



- Push grille up against ceiling.



USE AND CARE

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND LOCK OUT SERVICE PANEL BEFORE CLEANING OR SERVICING THIS UNIT.

The motor is permanently lubricated. Do not oil or disassemble motor.

TO CLEAN GRILLE:

CAUTION: Plastic parts can be cleaned with mild, soapy water (use a mild detergent, such as dishwashing liquid) and dried with a soft cloth. **Do not use abrasive cloth, steel wool pads, or scouring powders.**

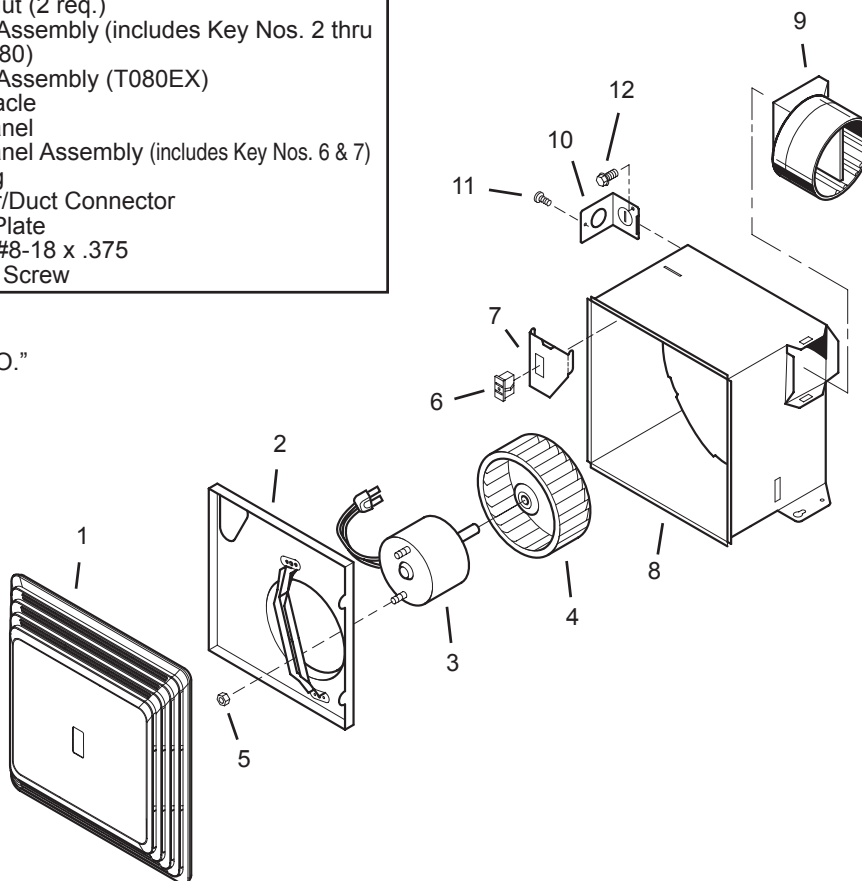
TO CLEAN FAN ASSEMBLY:

Unplug fan assembly. To remove motor plate: Find the single tab on the motor plate (located next to the receptacle). Push up near motor plate tab while pushing out on side of housing. Or insert a straight-blade screwdriver into slot in housing (next to tab) and twist screwdriver. Gently vacuum fan, motor and interior of housing. METAL AND ELECTRICAL PARTS SHOULD NEVER BE IMMERSED IN WATER.

SERVICE PARTS

KEY	PART NO.	DESCRIPTION
1	97013576	Grille
2	97014926	Motor Plate
3	99080518	Motor (T080)
	99080524	Motor (T080EX)
4	99020276	Impeller
5	99260425	Motor Nut (2 req.)
*	97015159	Blower Assembly (includes Key Nos. 2 thru 5) (T080)
	97015160	Blower Assembly (T080EX)
6	99270982	Receptacle
7	98009611	Wire Panel
*	97015170	Wire Panel Assembly (includes Key Nos. 6 & 7)
8	97014922	Housing
9	97003932	Damper/Duct Connector
10	98008868	Wiring Plate
11	99150575	Screw, #8-18 x .375
12	99150574	Ground Screw

* Not shown assembled.
Order replacement parts by
"PART NO." - not by "KEY NO."



WARRANTY

Limitation of Warranties and Claims

Seller warrants to the original purchaser that the goods sold hereunder shall be free from defects in workmanship and material under normal use and service (except in those cases where the materials are supplied by the buyer) for a period of one year from the date of original installation or eighteen (18) months from the date of shipment, whichever occurs first. The liability of seller under this warranty is limited to replacing, repairing, or issuing credit (at cost, F.O.B. factory and at seller's discretion) for any part or parts which are returned by buyer during such period provided that:

- seller is notified in writing within ten (10) days following discovery of such defects by buyer, or within ten (10) days after such defects should reasonably have been discovered, whichever is less;
- the defective unit is returned to seller, transportation charges prepaid by buyer.
- payment in full has been received by seller or said products; and
- seller's examination of such unit shall disclose to its satisfaction that such defects have not been caused by misuse, neglect, improper installation, repair, alteration, act of God, or accident.

No warranty made hereunder shall extend to any seller product whose serial number is altered, effaced or removed. Seller makes no warranty, express or implied, with respect to motors, switches, controls, or other components of seller's product, where such components are warranted separately by their respective manufacturers. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable to buyer for indirect, incidental collateral, or consequential damages of any kind. (BUYER'S FAILURE TO PAY THE FULL AMOUNT DUE WITHIN SIXTY (60) DAYS OF DATE OF INVOICE SHALL OPERATE TO RELEASE SELLER FROM ANY AND ALL LIABILITY OR OBLIGATION ARISING PURSUANT TO ANY WARRANTY, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, MADE IN CONNECTION WITH ANY CONTRACT FORMED HEREUNDER. BUYER AGREES THAT SUCH FAILURE TO PAY SHALL CONSTITUTE A VOLUNTARY WAIVER OF ANY AND ALL SUCH WARRANTIES ARISING PURSUANT TO SUCH CONTACT.)



READ AND SAVE THESE INSTRUCTIONS

Installer: leave this guide with homeowner.

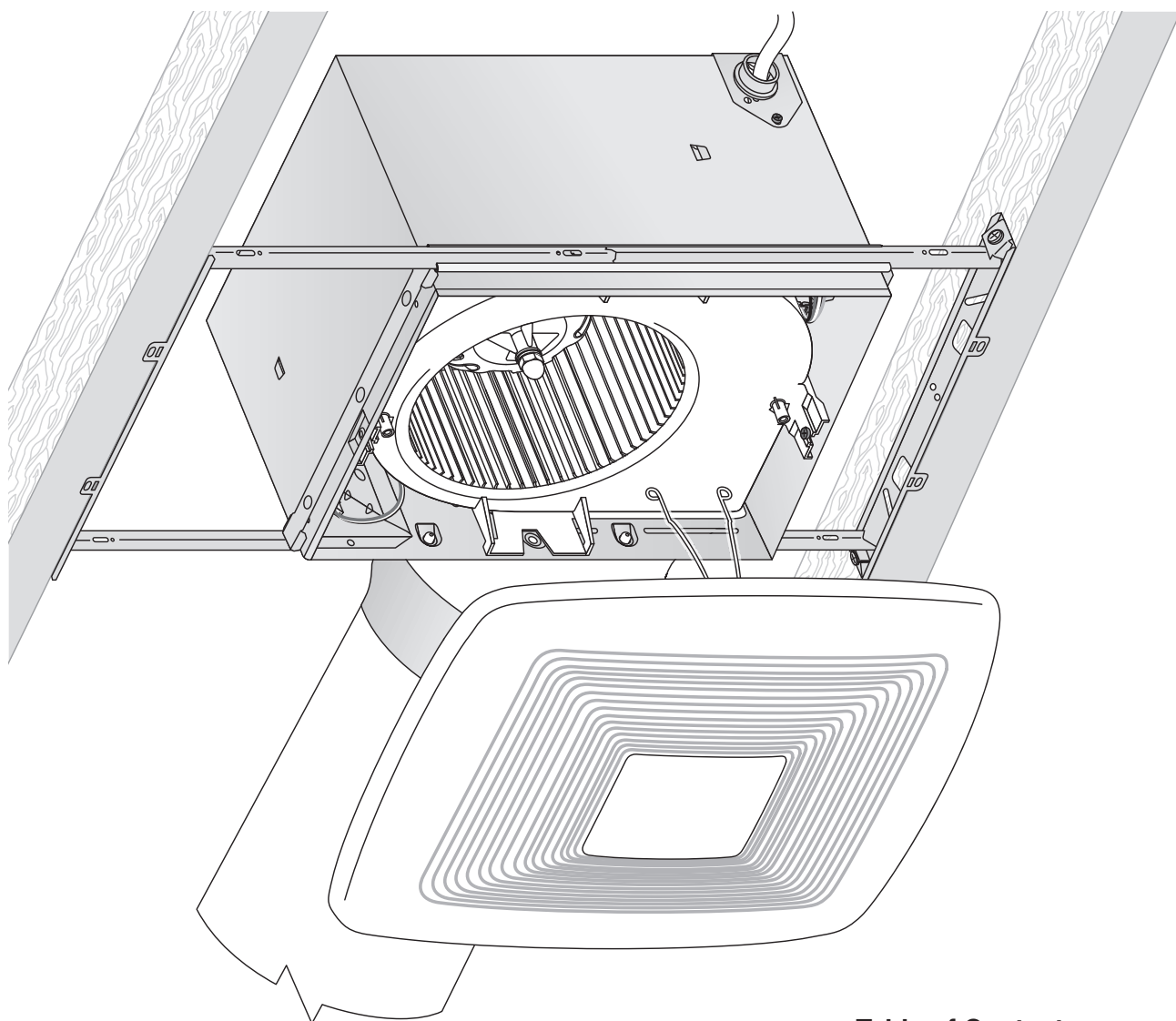
T080E ■ T110E

ENERGY STAR®

Multi-Speed

Ventilation Fan

INSTALLATION GUIDE



**Easy installation in both
new construction and retrofit**

Table of Contents

Warnings and Cautions	2
Typical Installation	2
New Construction Installation	3
Retrofit Installation	7
Operation	12
Cleaning and Maintenance	12
Troubleshooting	12
Service Parts	13
Warranty	13

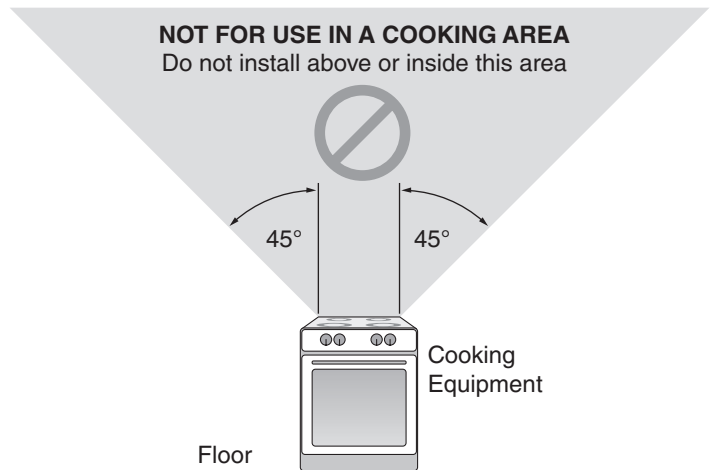
WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. Use only ON/OFF switch, mechanical timer or relay-switched control.
8. Acceptable for use over a tub or shower when connected to a GFCI (Ground Fault Circuit Interrupter) - protected branch circuit.
9. This unit must be grounded.

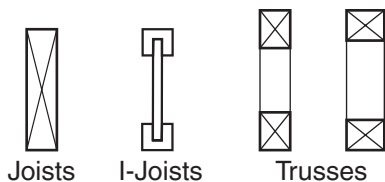
CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. This product is designed for installation in ceilings up to a 12/12 pitch (45 degree angle). Duct connector must point up. **DO NOT MOUNT THIS PRODUCT IN A WALL.**
3. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
4. Please read specification label on product for further information and requirements.

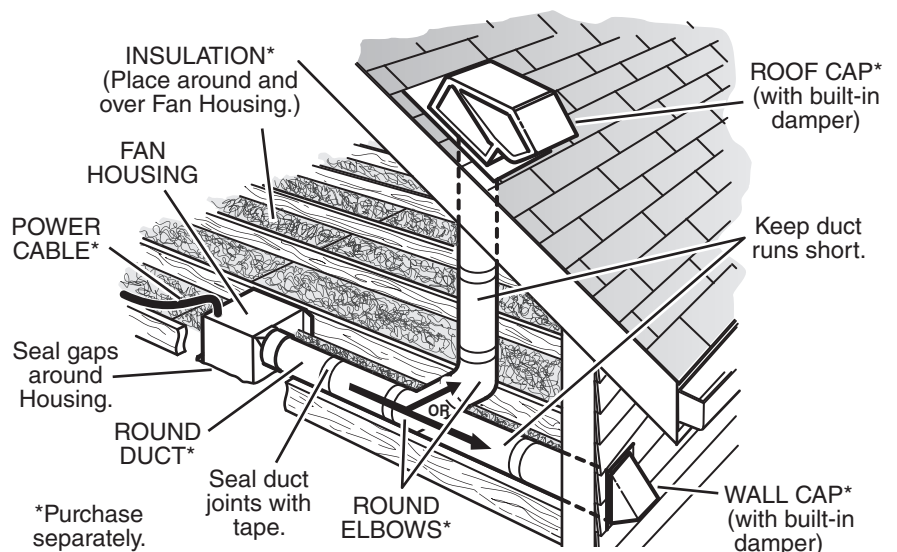


Typical Installation

- Installation is the same for:



- Fits in 2" x 8" ceiling construction.
- Infinitely adjust the fan position between joists from 14" to 24" on center.



The ducting from this fan to the outside of the building has a strong effect on the air flow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated airflow.

6-inch round rigid metal duct is recommended for best performance.

New Construction Installation

Tools needed

- Power screwdriver with a Phillips bit
- Phillips screwdriver
- Flathead screwdriver
- Pliers
- Wire insulation stripper
- Wire cutter

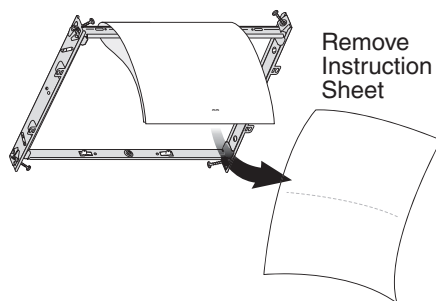
Materials needed

- 6" round metal ducting recommended for best performance.
Use of other ducting is acceptable but may impact performance.
- Roof cap or wall cap (built-in damper recommended)
- Tape to seal duct connections
- Electrical wiring and supplies per local code requirements

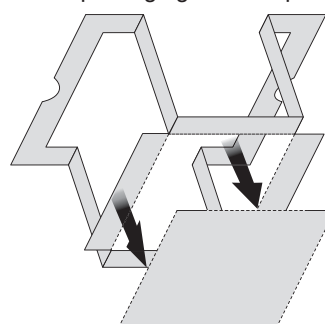
1 Remove Packaging



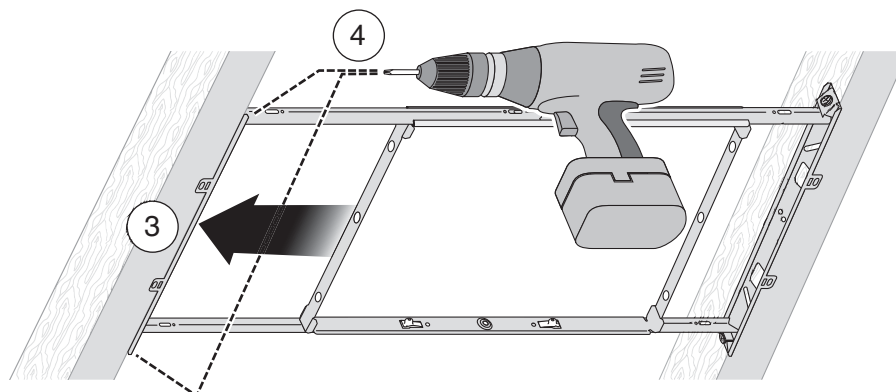
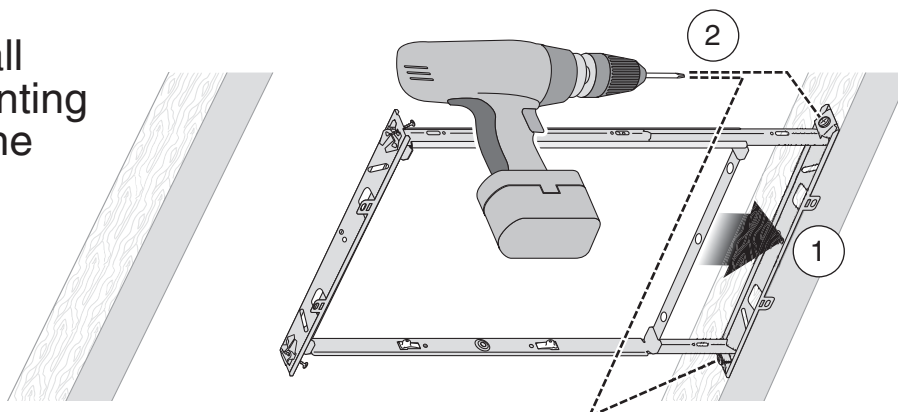
Parts Bag holds
Knockout Plate
and six (6)
screws



Punch out Mask from
packaging. See Step 6.

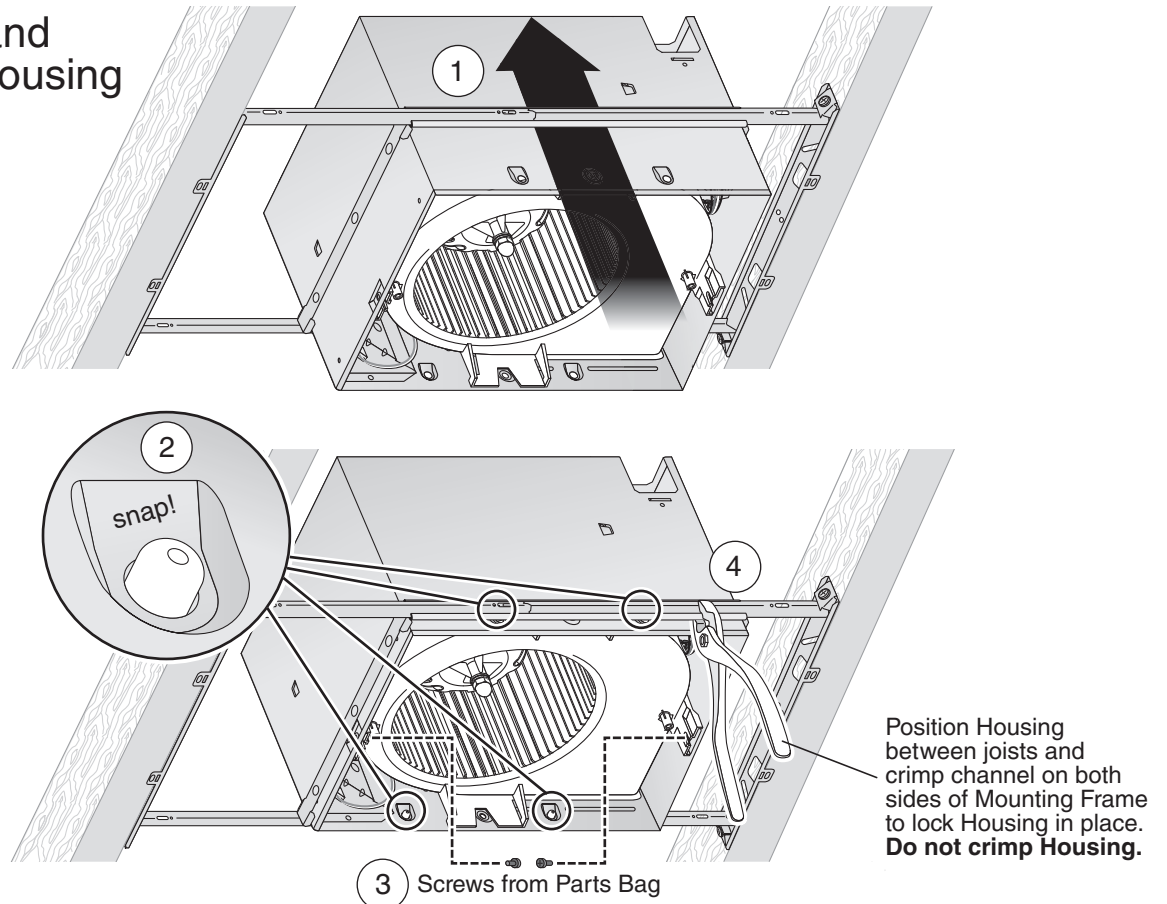


2 Install Mounting Frame

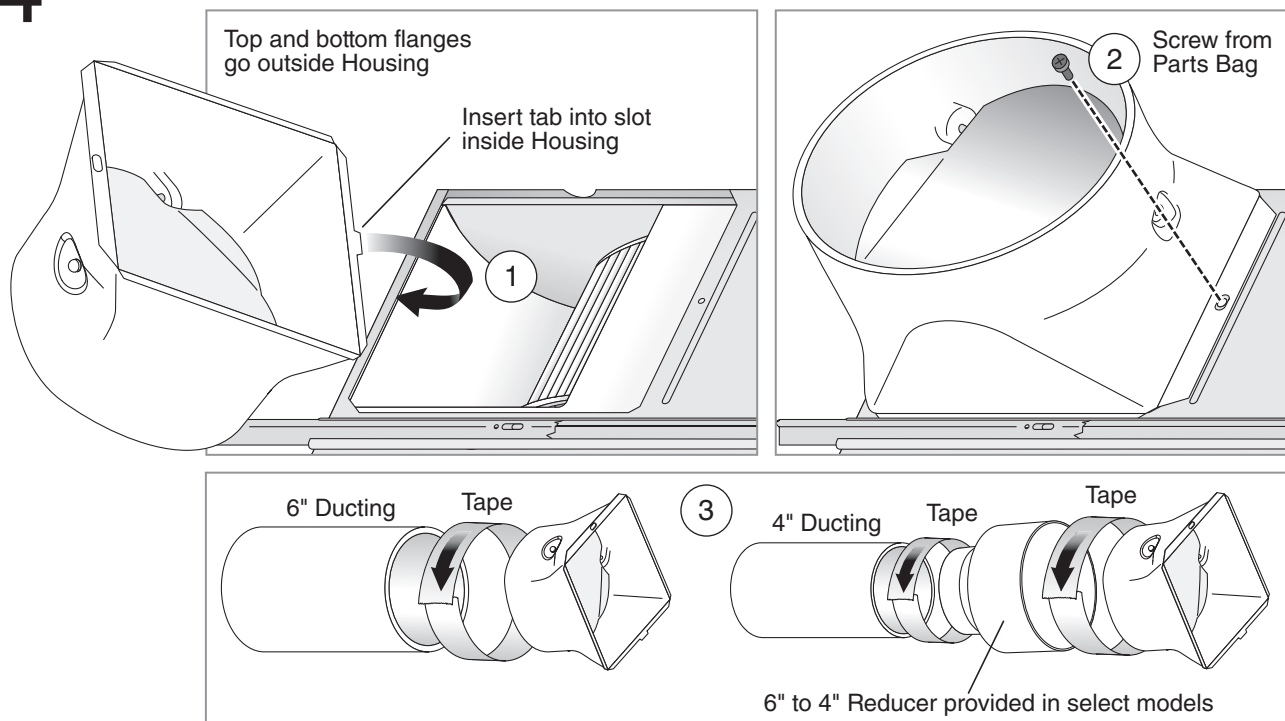


New Construction Installation

3 Snap-in and Secure Housing



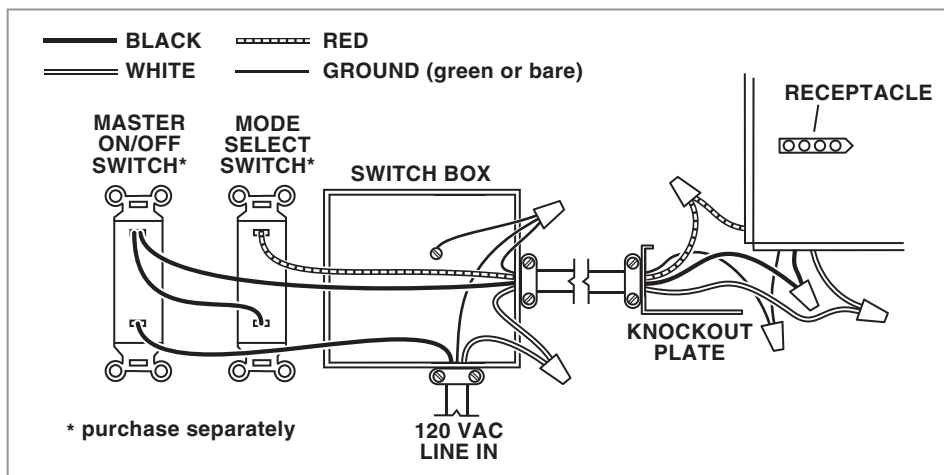
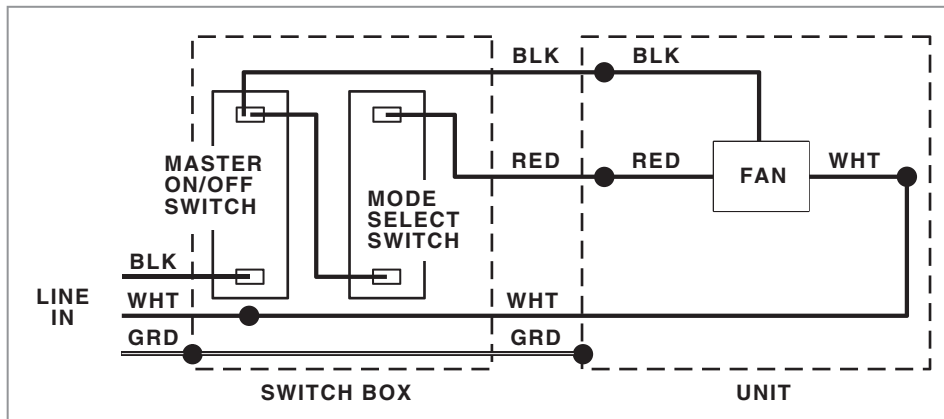
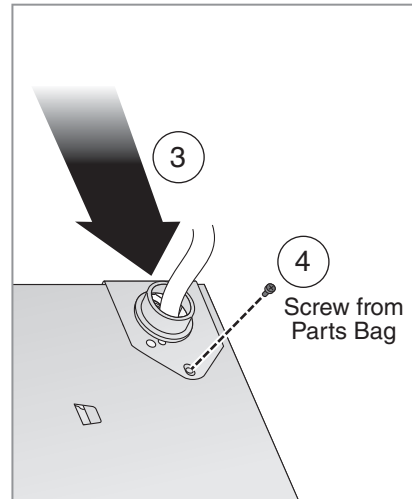
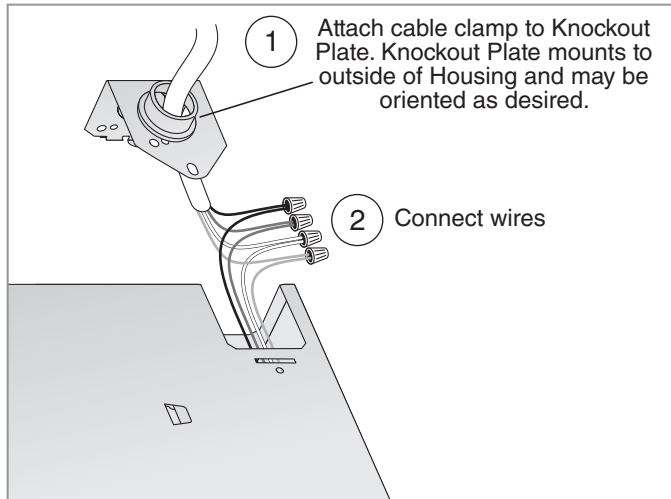
4 Attach Duct Connector and Ducting



New Construction Installation

5 Connect Wires and Install Knockout Plate

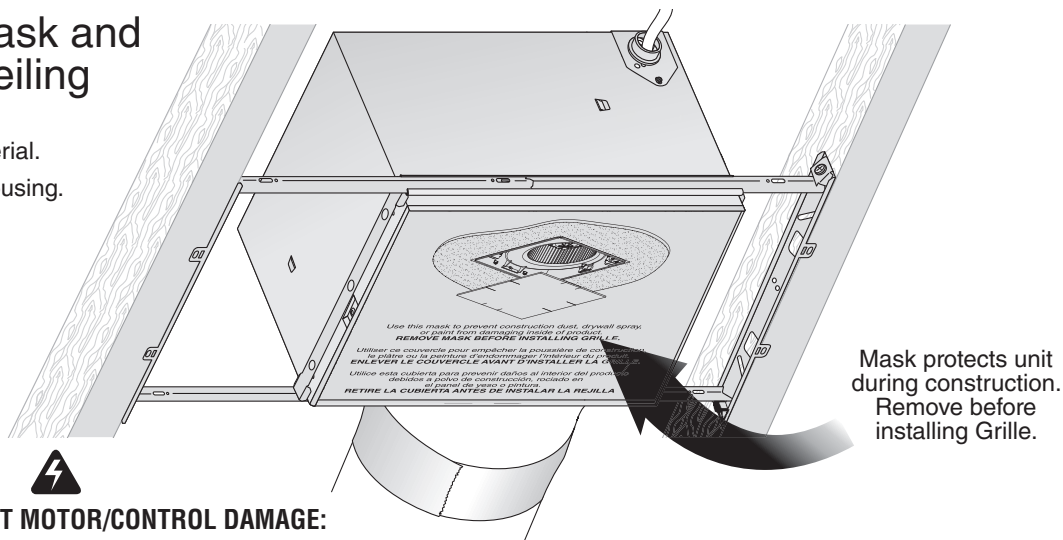
- Run 120VAC electrical wiring to the installation location.
- Use proper UL-approved connectors to secure wiring to the Knockout Plate provided in Parts Bag.
- Connect wires as shown in wiring diagram.



New Construction Installation

6 Insert Mask and Finish Ceiling

- Install ceiling material.
- Cut out around Housing.

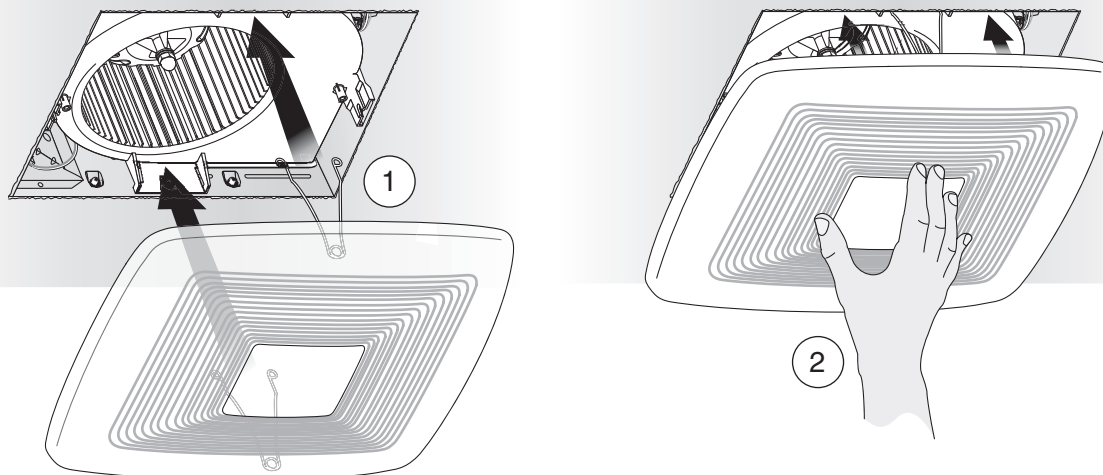


CAUTION

IN ORDER TO PREVENT MOTOR/CONTROL DAMAGE:

If the blower was unplugged, power must be disconnected (see page 2, WARNING item 2) before inserting motor plugs into control assembly.

7 Install Grille



See Page 12 for Operations, Cleaning and Maintenance, and Troubleshooting.

Retrofit Installation

Tools needed

- Power screwdriver with a Phillips bit
- Phillips screwdriver
- Flathead screwdriver
- Pliers
- Wire insulation stripper
- Wire cutter
- Ruler
- Pencil
- Drywall saw
- Claw hammer or pry bar
- Utility knife

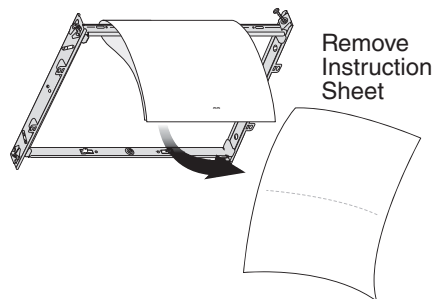
Materials needed

- Tape to seal duct connections
- Existing rigid duct will require the addition of a short length of flexible duct
- Electrical wiring and supplies per local code requirements

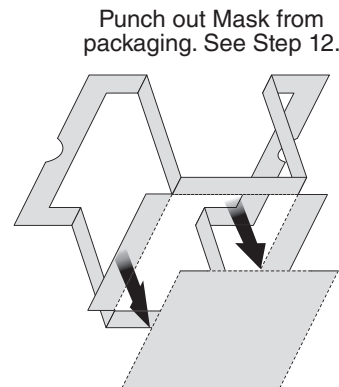
1 Remove Packaging



Parts Bag holds Knockout Plate and six (6) screws



Remove Instruction Sheet



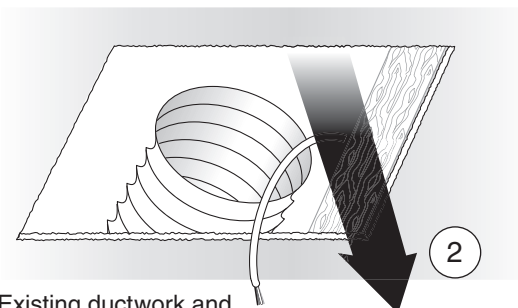
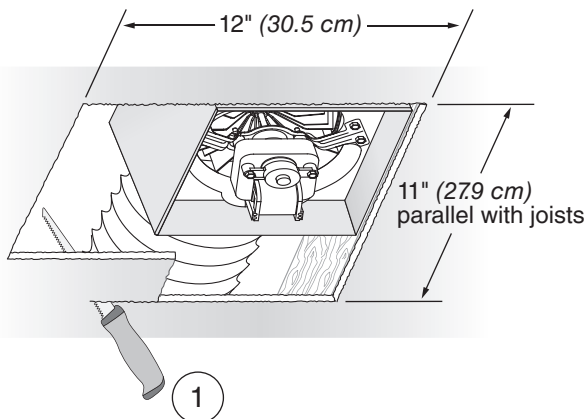
Punch out Mask from packaging. See Step 12.

2 Switch Off Power

WARNING ⚡

Before removing existing fan, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

3 Enlarge Ceiling Opening and Remove Existing Fan



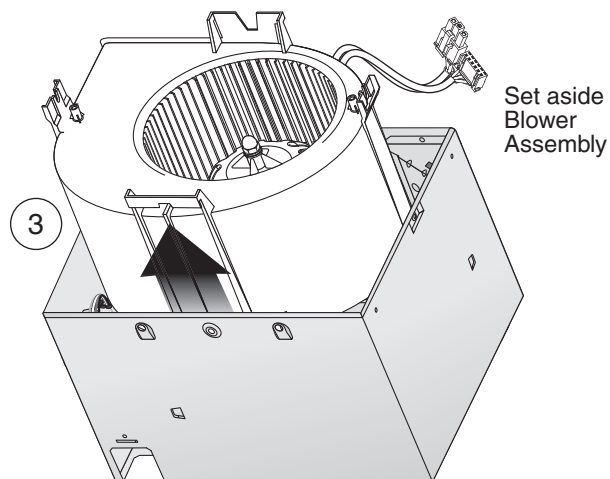
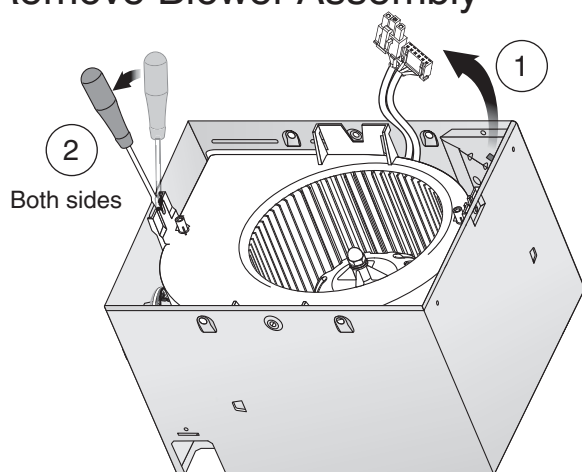
Existing ductwork and wiring left in place

4 Examine Wiring

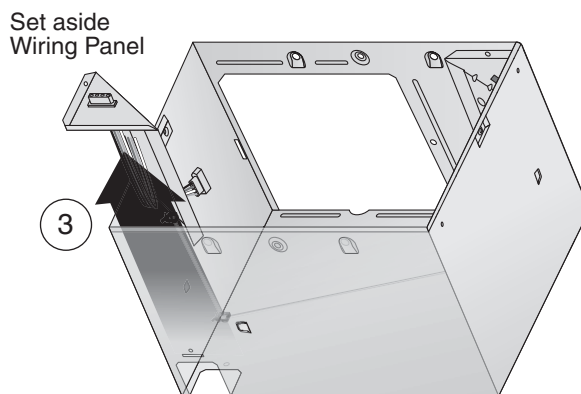
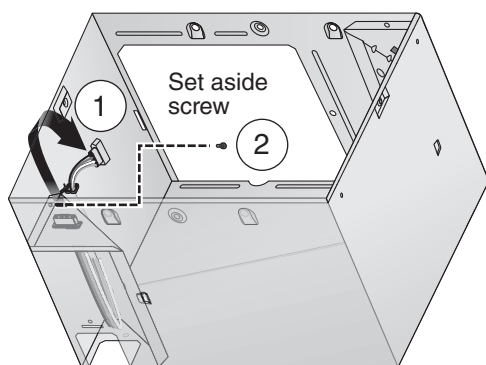
Examine the existing wiring to make sure it is not damaged. If any damage is found, **DO NOT CONTINUE INSTALLATION** of this product. Contact a qualified person(s) for repair.

Retrofit Installation

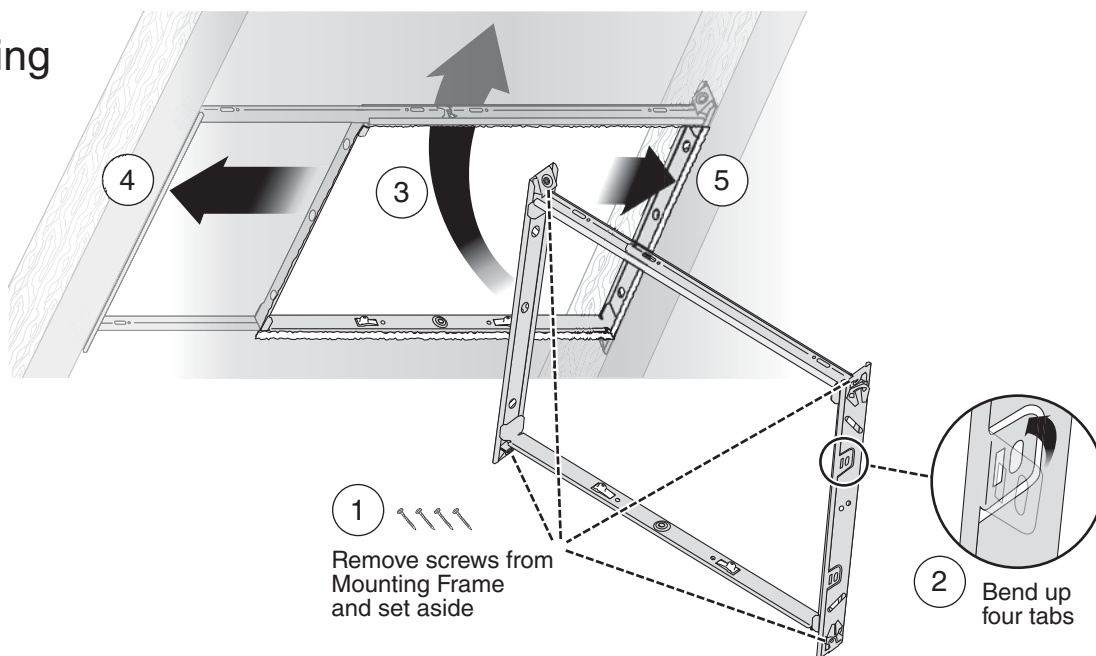
5 Remove Blower Assembly



6 Remove Wiring Panel

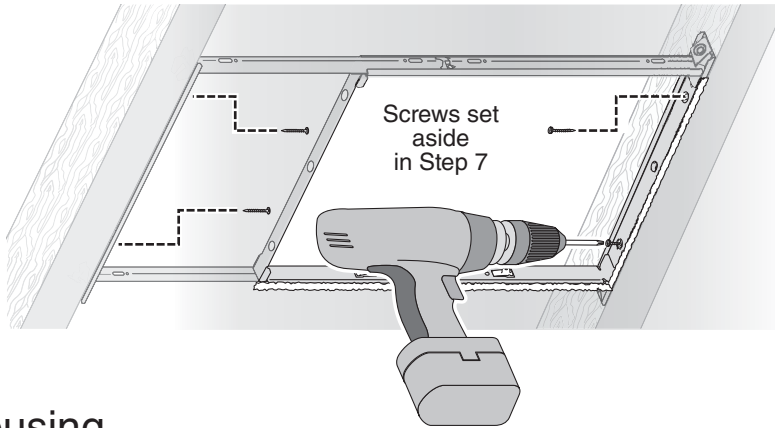


7 Insert Mounting Frame

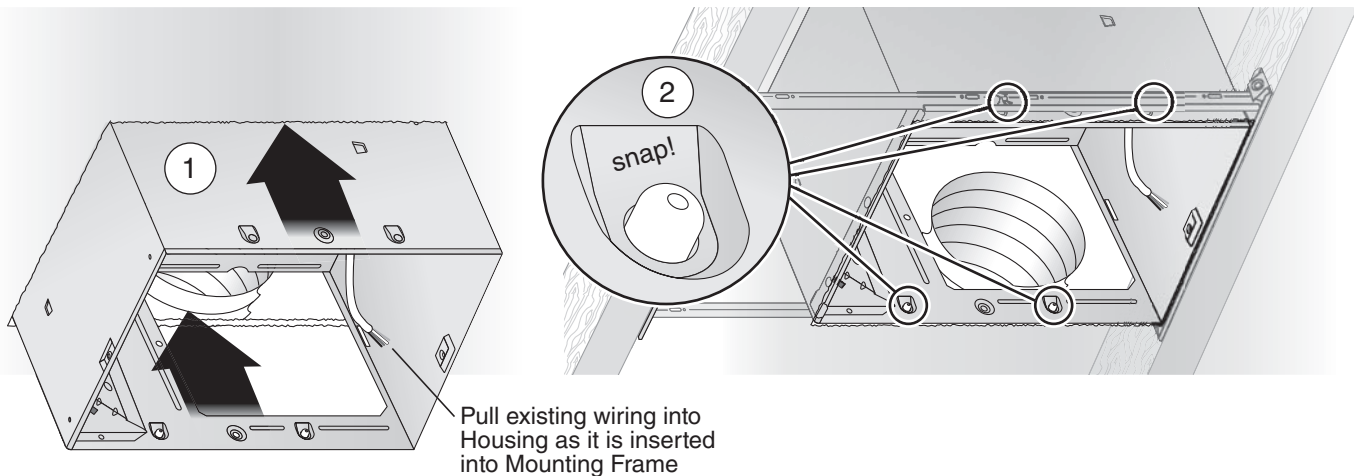


Retrofit Installation

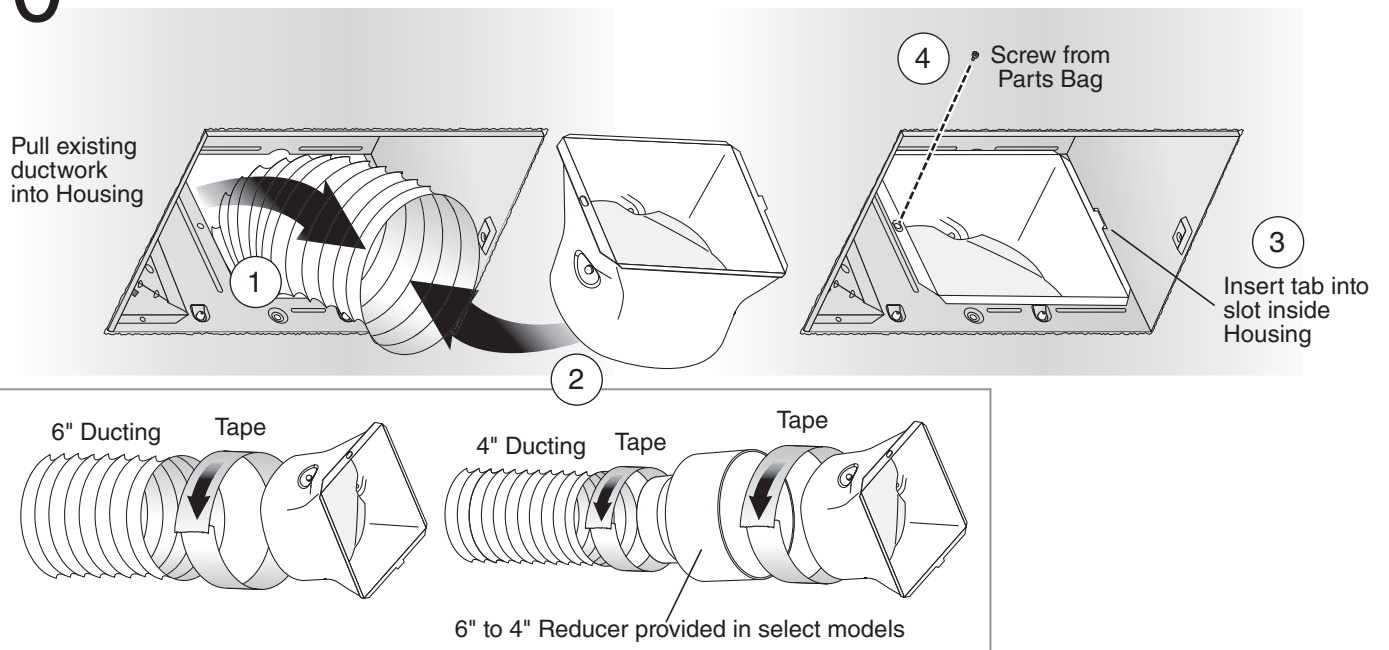
8 Secure Mounting Frame



9 Snap-in Housing



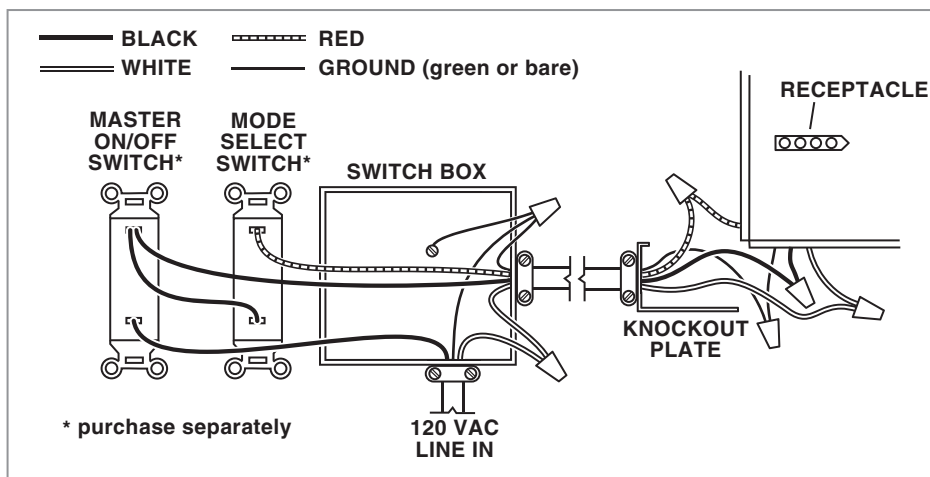
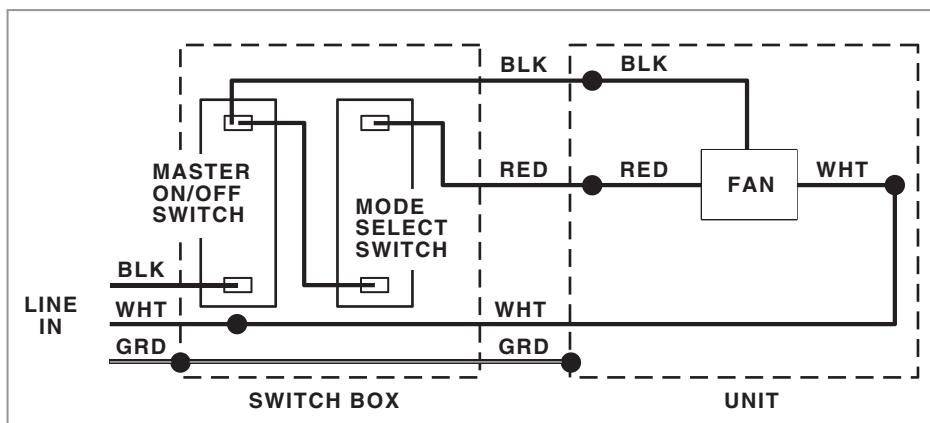
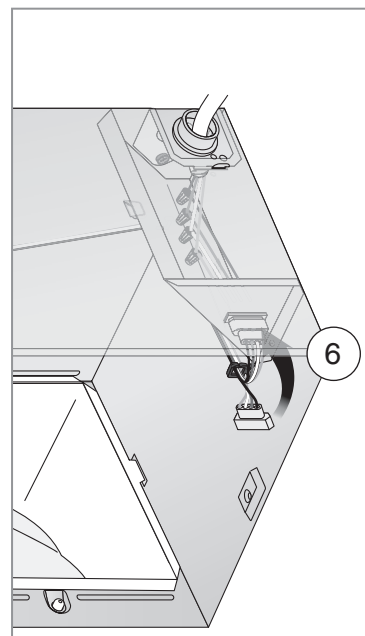
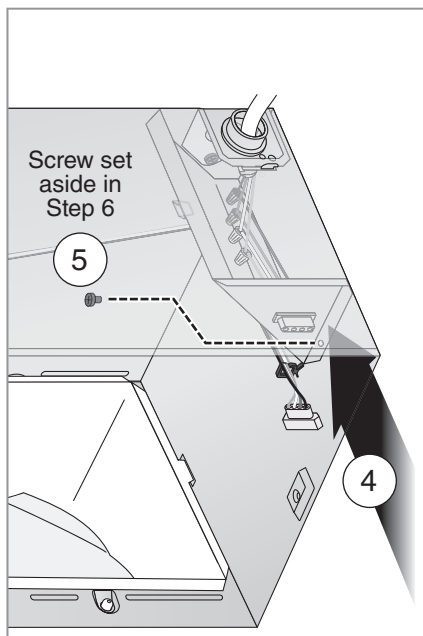
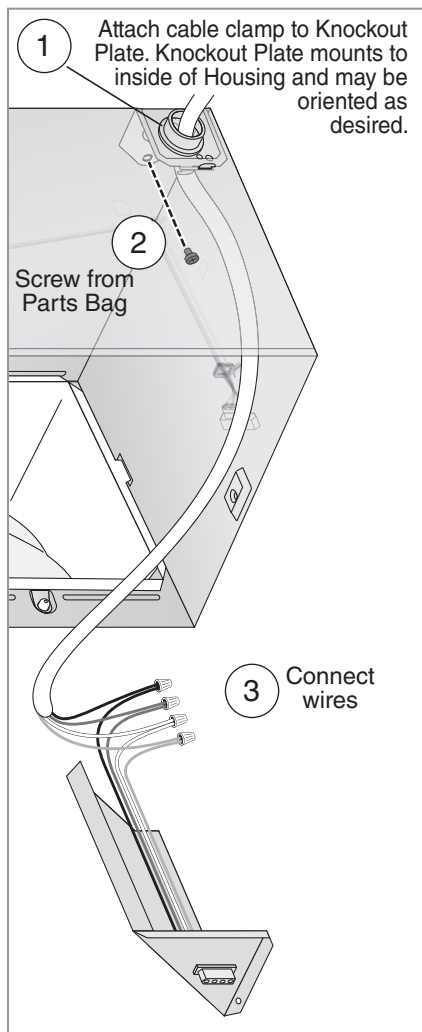
10 Attach Ducting and Duct Connector



Retrofit Installation

11 Install Knockout Plate, Connect Wires and Reinstall Wiring Panel

- Use proper UL-approved connectors to secure wiring to the Knockout Plate provided in Parts Bag.
- Connect wires as shown in wiring diagram.



Retrofit Installation

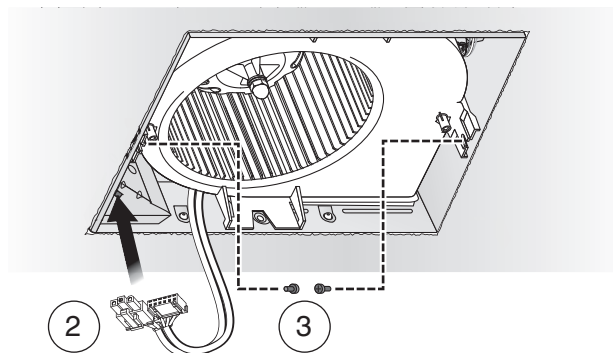
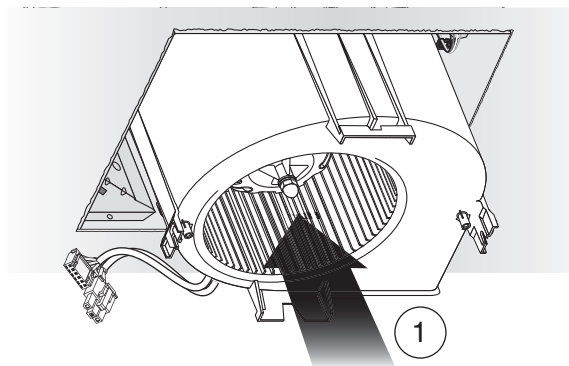
12 Reinsert and Secure Blower Assembly

CAUTION



IN ORDER TO PREVENT MOTOR/CONTROL DAMAGE:

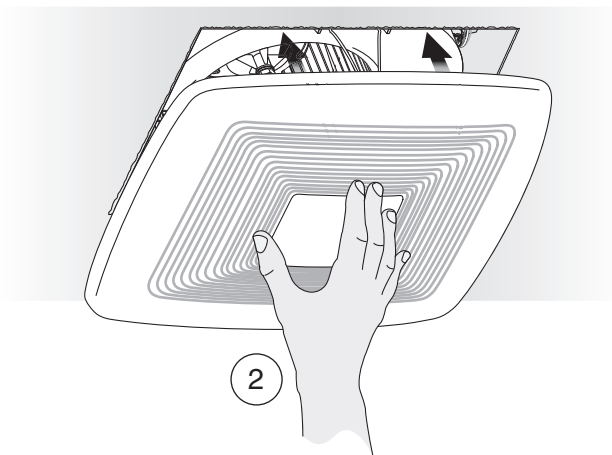
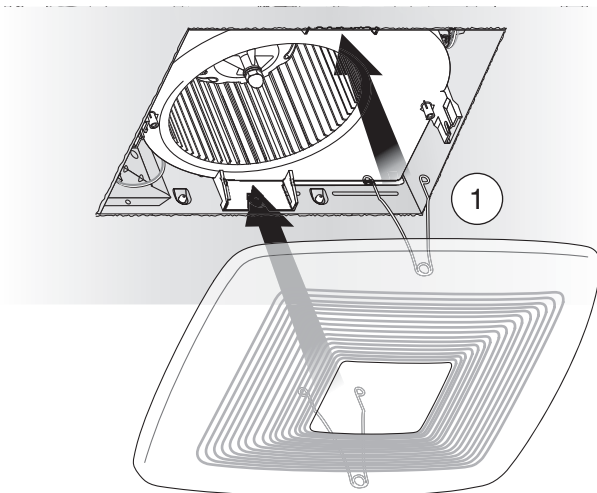
Power must be disconnected (see page 2, WARNING item 2) before inserting motor plugs into control assembly.



Screws from Parts Bag

If ceiling repairs are needed, place Mask in Housing after Blower Assembly is secured.
See New Construction Installation Step 6.
Remove Mask before installing Grille.

13 Install Grille



WARNING ⚡ Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

Operation

To Turn Fan ON

Turn the master switch ON.

It is normal for this ventilation fan to take approximately 5 seconds to start running after it is turned on.

- Fan will run at the certified airflow rate if the mode select switch is ON.
- Fan will run at the user-adjustable airflow rate if the mode select switch is OFF.

To Use Fan Time Delay Airflow Rate Change

1. Turn the master switch ON.
2. Turn the mode select switch ON - fan will run at the certified airflow rate.
3. When the mode select switch is turned OFF, fan will continue to run at the certified airflow rate until the user-adjustable time delay has elapsed, and then will automatically change to the user-adjustable airflow rate.

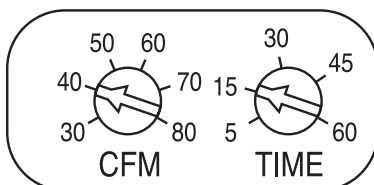
To Set the User-Adjustable Airflow Rate*

Using a small, flat-blade screwdriver, carefully rotate the CFM adjustment until the arrow points to the desired airflow rate.

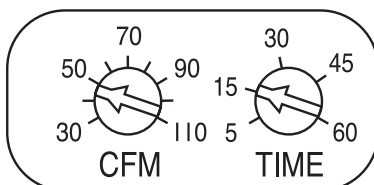
To Set the User-Adjustable Time Delay*

Using a small, flat-blade screwdriver, carefully rotate the TIME adjustment until the arrow points to the desired time delay, shown in minutes.

* The user-adjustable controls are located in one corner of the Fan Housing, behind the Grille.



T080E User-adjustable controls



T110E User-adjustable controls

Cleaning and Maintenance

CAUTION ⚠ ⚡

IN ORDER TO PREVENT MOTOR/CONTROL DAMAGE:

DO NOT remove motor plug to stop spinning motor.

Power must be disconnected (see WARNING at top left of this page) before motor plug is removed or inserted into control assembly.

To Clean

For quiet and efficient operation, long life and attractive appearance, remove Grille and vacuum interior of unit with a dusting brush attachment.

The Motor is permanently lubricated and never needs oiling. If the motor bearings are making excessive or unusual noises, replace the Control Assembly and Motor.

Troubleshooting

Symptom: The fan does not run.

- Check for an open fuse or circuit breaker in the building's service panel.
- Check that the two (2) plug-in connections for the Motor and the Control are seated firmly in place.
- Check that the Blower Wheel spins freely.

Symptom: The fan runs erratically.

- Check that the Blower Wheel is firmly attached to the Motor shaft and both spin freely.

Symptom: The fan seems noisy.

- Check that the back draft damper in the fan's Duct Connector pivots freely. Screws used to attach the duct to the Duct Connector may be preventing the damper from opening.
- Check that the back draft damper in the wall or roof cap pivots freely. These dampers are sometimes mistakenly painted shut or obstructed by bird and insect debris.

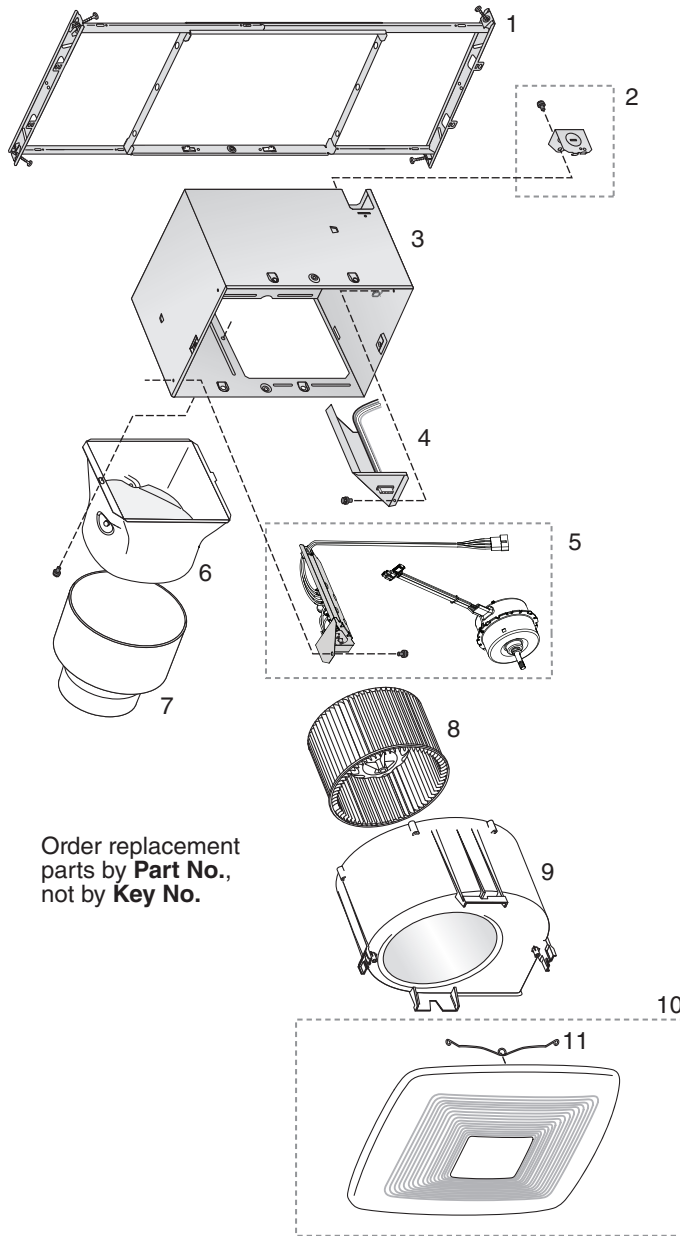
Symptom: The fan does not properly ventilate the room.

- For spot ventilation, turn both the master switch and the mode select switch ON to enable the fan to run at the certified airflow rate.
- For spot ventilation followed by continuous ventilation, increase the "TIME" setting of the user-adjustable time delay.
- For continuous ventilation, increase the "CFM" setting of the user-adjustable airflow rate.

To Turn Fan OFF

Turn the master switch OFF.

Service Parts



Order replacement parts by **Part No.**, not by **Key No.**

Key No.	Part No.	Description
1	97018349	Mounting Frame
2	97018721	Knockout Plate & Screws
3	97018382	Housing
4	97018471	Wiring Panel/Harness Assembly
5	97020846	Control Assembly & Motor (T080E)
	97020845	Control Assembly & Motor (T110E)
6	97018331	Duct Connector - 6"
7	99111513	6" to 4" Reducer (Model T080E only)
8	99020301	Blower Wheel
9	97019371	Scroll Assembly (T080E)
	97018768	Scroll Assembly (T110E)
10	97021087	Grille Assembly (includes 11)
11	99140208	Grille Spring (2 req'd)

Warranty

Limitation of Warranties and Claims

Seller warrants to the original purchaser that the goods sold hereunder shall be free from defects in workmanship and material under normal use and service (except in those cases where the materials are supplied by the buyer) for a period of one year from the date of original installation or eighteen (18) months from the date of shipment, whichever occurs first. The liability of seller under this warranty is limited to replacing, repairing, or issuing credit (at cost, F.O.B. factory and at seller's discretion) for any part or parts which are returned by buyer during such period provided that:

- seller is notified in writing within ten (10) days following discovery of such defects by buyer, or within ten (10) days after such defects should reasonably have been discovered, whichever is less;
- the defective unit is returned to seller, transportation charges prepaid by buyer;
- payment in full has been received by seller for said products;
- seller's examination of such unit shall disclose to its satisfaction that such defects have not been caused by misuse, neglect, improper installation, repair, alteration, act of God, or accident.

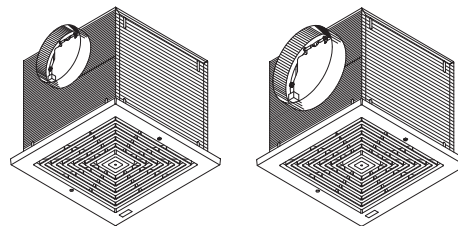
No warranty made hereunder shall extend to any seller product whose serial number is altered, effaced or removed. Seller makes no warranty, express or implied, with respect to motors, switches, controls, or other components of seller's product, where such components are warranted separately by their respective manufacturers. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable to buyer for indirect, incidental collateral, or consequential damages of any kind. (BUYER'S FAILURE TO PAY THE FULL AMOUNT DUE WITHIN SIXTY (60) DAYS OF DATE OF INVOICE SHALL OPERATE TO RELEASE SELLER FROM ANY AND ALL LIABILITY OR OBLIGATION ARISING PURSUANT TO ANY WARRANTY, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, MADE IN CONNECTION WITH ANY CONTRACT FORMED HEREUNDER. BUYER AGREES THAT SUCH FAILURE TO PAY SHALL CONSTITUTE A VOLUNTARY WAIVER OF ANY AND ALL SUCH WARRANTIES ARISING PURSUANT TO SUCH CONTACT.)

TWIN CITY FAN & BLOWER | WWW.TCF.COM

5959 Trenton Lane N | Minneapolis, MN 55442 |

Phone: 763-551-7600 | Fax: 763-551-7601

CEILING / WALL-MOUNT VENTILATORS • 120V



READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. To reduce the risk of fire, use only metal ductwork.
8. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Interrupter) - protected branch circuit.
9. Never place a switch where it can be reached from a tub or shower.
10. This unit must be grounded.

CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
3. Please read specification label on product for further information and requirements.

TABLE OF CONTENTS

This manual is divided into sections as follows:

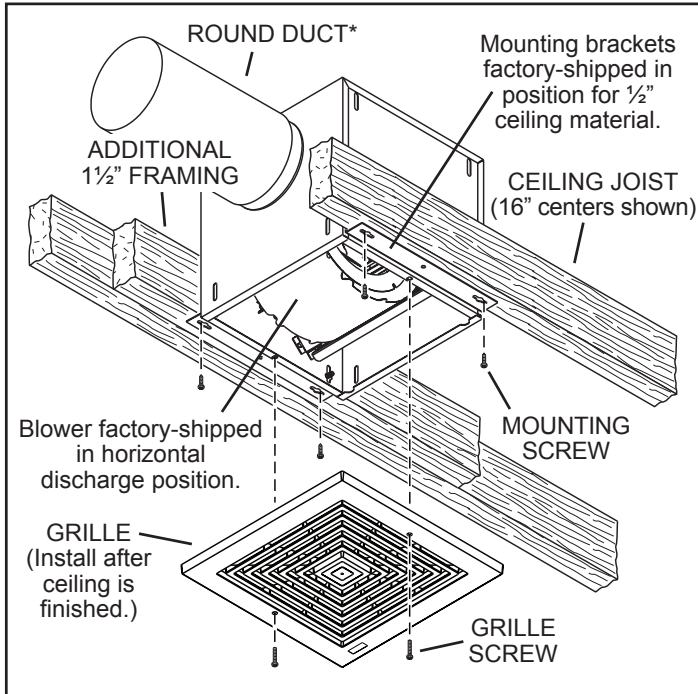
- **"TYPICAL INSTALLATION"**
 - This section shows a common installation in new and existing, frame construction.
 - Mounting (new construction)
 - Mounting (existing construction)
 - Wiring
 - Ducting (horizontal blower discharge)
- **"MOUNTING OPTIONS"**
- **"WIRING OPTIONS"**
 - Wiring Plate Position
- **"DUCTING OPTIONS"**
 - Blower Discharge Positions
 - Ducting (vertical blower discharge)
- **"USE AND CARE"**
- **"SERVICE PARTS"**
- **"WARRANTY"**

Installer: Leave this manual with the homeowner.

Homeowner: Use and Care information on page 3.

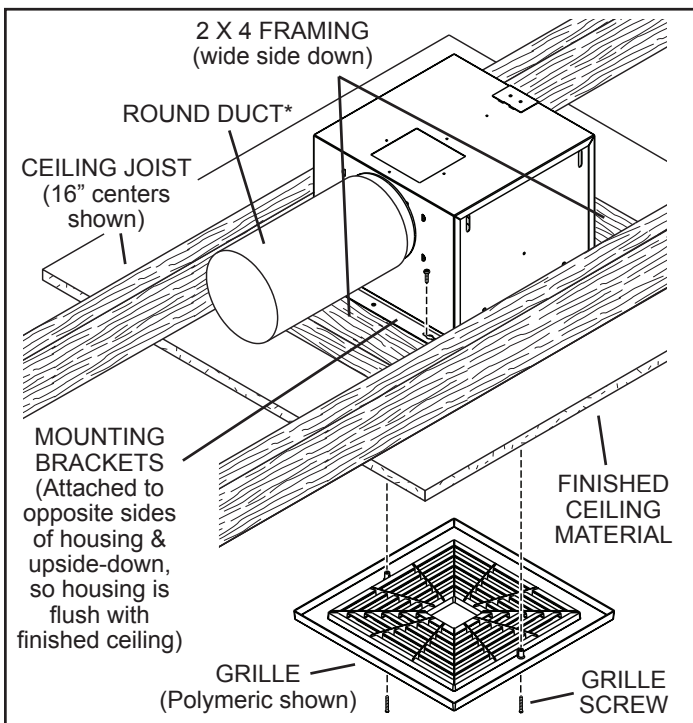
TYPICAL INSTALLATION

MOUNTING (*New Frame Construction*)



Factory-shipped unit installed in new construction.

MOUNTING (*Existing Frame Construction*)

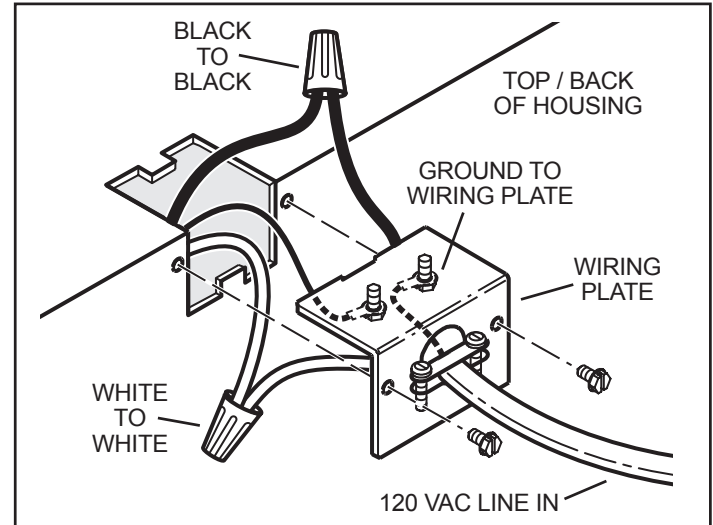


Factory-shipped unit installed in existing construction.

* T100 & T150 use 6\" round duct.
T200, T250 & T300 use 8\" round duct.

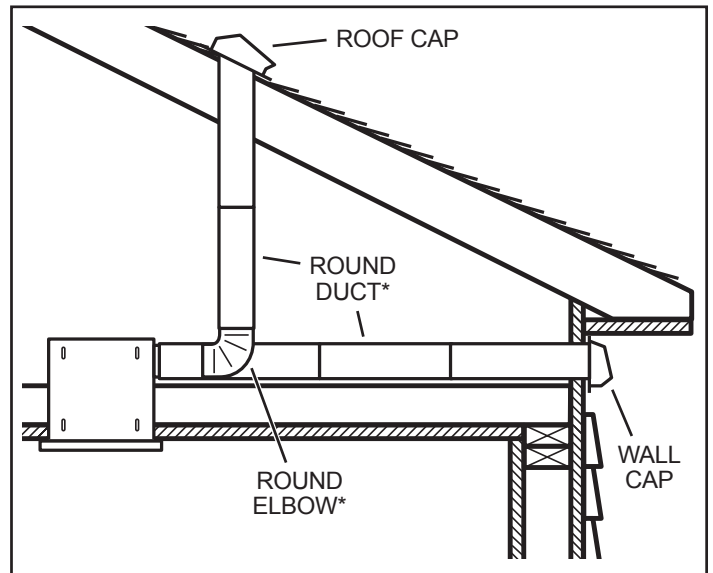
TYPICAL INSTALLATION

WIRING



Ventilator can be wired from outside of housing. Use UL approved connectors to wire per local codes.

DUCTING (*Horizontal blower discharge*)



Two ways to connect ductwork to a factory-shipped unit.

* T100 & T150 use 6\" round duct.
T200, T250 & T300 use 8\" round duct.

IMPORTANT:

Remove shipping tape from damper

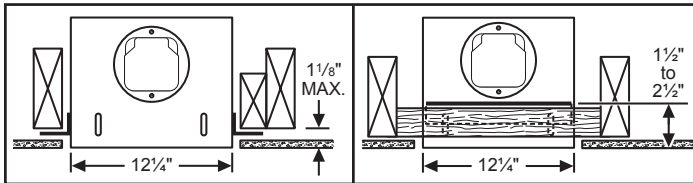
Remove the shipping tape from the damper flap and make sure that damper flap opens and closes freely inside the ductwork. Use duct tape to make ductwork connections secure and air-tight.

Remove shipping ring from blower inlet

Remove the shipping ring from the blower inlet before operating the ventilator.

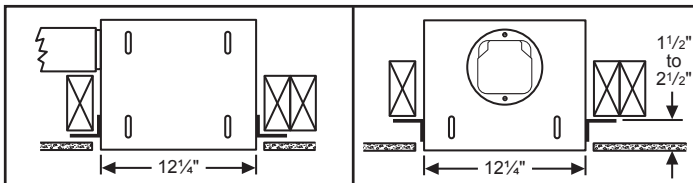
MOUNTING OPTIONS

1/4-20 hex nuts secure mounting brackets to housing. Loosen and re-tighten or remove and replace nuts as necessary for desired mounting bracket position.



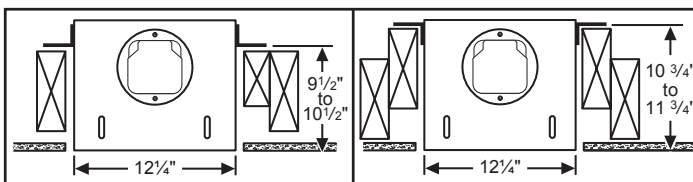
Mounting Brackets in
factory-shipped position.
(Outlet parallel to joists.)
(New construction)

Mounting Brackets flipped
over and mounted to outlet
sides of housing.
(Outlet parallel to joists.)
(Existing construction)



Mounting Brackets mounted
to outlet sides of housing.
(Outlet perpendicular to joists.)
(New construction)

Mounting Brackets flipped
over to give approx. 1"
more clearance.
(Outlet parallel to joists.)
(New construction)

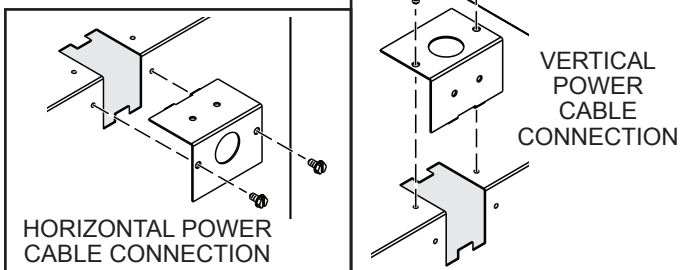


Mounting Brackets mounted
to top sides of housing.
(Outlet parallel to joists.)
(New or existing construction)

Mounting Brackets flipped
over and mounted to top
of sides of housing.
(Outlet parallel to joists.)
(New or existing construction)

WIRING OPTIONS

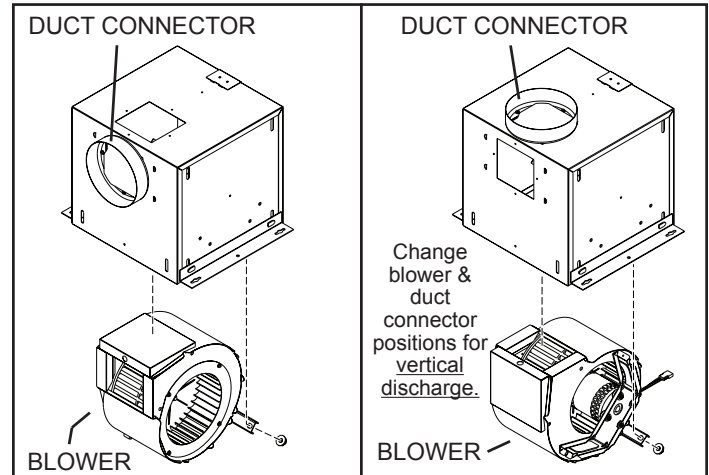
WIRING PLATE POSITION



Wiring plate mounts to side or top of housing.

DUCTING OPTIONS

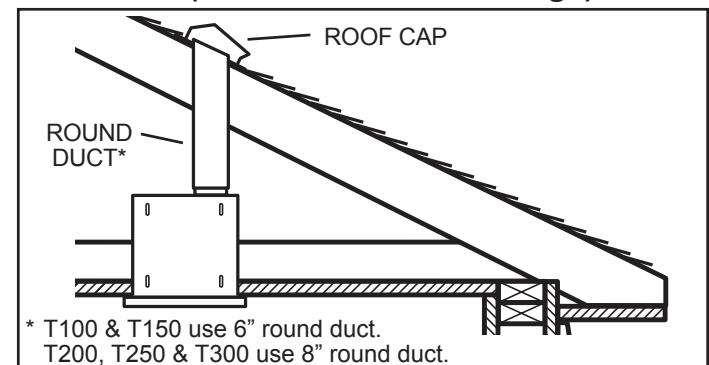
BLOWER DISCHARGE POSITIONS



Blower and duct connector in
horizontal discharge position.
(Factory shipped)

Blower and duct connector in
vertical discharge position.

DUCTING (Vertical blower discharge)



* T100 & T150 use 6" round duct.
T200, T250 & T300 use 8" round duct.

Typical ductwork connection to a ventilator
converted to vertical discharge.

USE AND CARE

Ventilator is designed for continuous operation. If desired, it may be controlled using an on/off switch or a solid-state, variable speed control. Follow wiring instructions packed with control, and adhere to all local and state codes, and the National Electrical Code.



WARNING: To reduce the risk of electric shock,
disconnect from power supply before servicing.

To clean grille: Use appropriate vacuum attachment or remove grille and clean with a soft cloth and mild soap or detergent. Dry grille thoroughly before reinstalling.

To clean blower assembly: Remove grille, unplug blower from housing, remove blower mounting nuts, and carefully remove blower from housing. Use appropriate vacuum attachment or a soft cloth and mild soap or detergent to clean blower discharge area and wheel. **DO NOT ALLOW WATER TO ENTER MOTOR.** Make sure blower assembly is completely dry before reinstalling.

Motor is permanently lubricated. Do not oil or disassemble motor.

SERVICE PARTS

KEY NO.	PART NO.	DESCRIPTION
1	97014725	Housing Assembly (T100 & T150)
	97014726	Housing Assembly (T200, T250, & T300)
2	97014728	Mounting Bracket (2 req.)
3	97014760	Damper Assembly (6" dia.)
	97014761	Damper Assembly (8" dia.)
4	99150415	Screw, 8-18 x 1/4 (12 req.)*
5	98005513	Wire Box Cover
6	99400035	Strain Relief Bushing
7	98005512	Wiring Plate
8	99150471	Ground Screw, 10-32 x 1/2 (2 req.)
9	97014774	Scroll Assembly (T100 & T150)
	97014775	Scroll Assembly (T200, T250, & T300)
10	98009399	Inlet Ring
11	99110805	Blower Wheel
12	99080481	Motor (T100)
	99080482	Motor (T150)
	99080483	Motor (T200)
	99080484	Motor (T250)
	99080485	Motor (T300)
13	99260558	Lock Nut, 8-32 (4 req.)*
14	99250959	Washer (4 req.)*
15	99100491	Grommet (4 req.)
		Blower Assembly, Complete (Includes Key Nos. 4 & 9-15)
	97014800	(T100)
	97014801	(T150)
	97014802	(T200)
	97014803	(T250)
	97014804	(T300)
16	99260477	Nut, 1/4-20 (6 req.)*
17	97006039	Wire Harness
18	99500390	Wrapper Insulation
19	99500391	Side Insulation (2 req.)
20	99420466	Insulation Mounting Clip
21	99110807	Grille
22	99420470	Grille Nut (2 req.)
23	99150472	Grille Mounting Screw (2 req.)
24	99150591	Screw, 10-16 x 7/8 (4 req.)*

Order replacement parts by PART NO. - not by KEY NO.

* Standard hardware - may be purchased locally.

WARRANTY

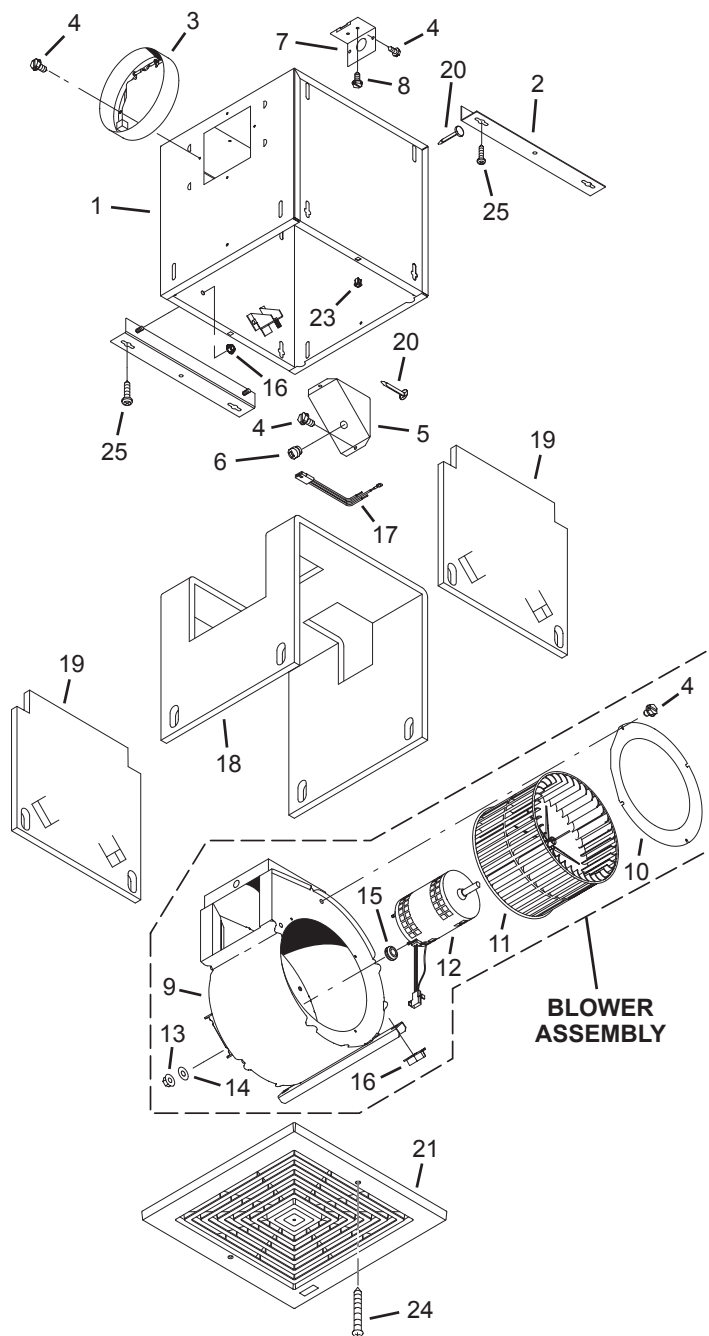
Limitation of Warranties and Claims

Seller warrants to the original purchaser that the goods sold hereunder shall be free from defects in workmanship and material under normal use and service (except in those cases where the materials are supplied by the buyer) for a period of one year from the date of original installation or eighteen (18) months from the date of shipment, whichever occurs first. The liability of seller under this warranty is limited to replacing, repairing, or issuing credit (at cost, F.O.B. factory and at seller's discretion) for any part or parts which are returned by buyer during such period provided that:

- seller is notified in writing within ten (10) days following discovery of such defects by buyer, or within ten (10) days after such defects should reasonably have been discovered, whichever is less;
- the defective unit is returned to seller, transportation charges prepaid by buyer.
- payment in full has been received by seller or said products; and
- seller's examination of such unit shall disclose to its satisfaction that such defects have not been caused by misuse, neglect, improper installation, repair, alteration, act of God, or accident.

No warranty made hereunder shall extend to any seller product whose serial number is altered, effaced or removed. Seller makes no warranty, express or implied, with respect to motors, switches, controls, or other components of seller's product, where such components are warranted separately by their respective manufacturers. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable to buyer for indirect, incidental collateral, or consequential damages of any kind. (BUYER'S FAILURE TO PAY THE FULL AMOUNT DUE WITHIN SIXTY (60) DAYS OF DATE OF INVOICE SHALL OPERATE TO RELEASE SELLER FROM ANY AND ALL LIABILITY OR OBLIGATION ARISING PURSUANT TO ANY WARRANTY, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, MADE IN CONNECTION WITH ANY CONTRACT FORMED HEREUNDER. BUYER AGREES THAT SUCH FAILURE TO PAY SHALL CONSTITUTE A VOLUNTARY WAIVER OF ANY AND ALL SUCH WARRANTIES ARISING PURSUANT TO SUCH CONTACT.)

SERVICE PARTS





Model T110 Fan

READ AND SAVE THESE INSTRUCTIONS

⚠️ WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. Acceptable for use over a tub or shower when connected to a GFCI (Ground Fault Circuit Interrupter) - protected branch circuit (ceiling installation only).
8. This unit must be grounded.

⚠️ CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. This product can be installed in a wall if mounted 8-ft. or more above the floor.
3. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
4. Please read specification label on product for further information and requirements.

CLEANING & MAINTENANCE

For quiet and efficient operation, long life, and attractive appearance - lower or remove grille and vacuum interior of unit with the dusting brush attachment.

The motor is permanently lubricated and never needs oiling. If the motor bearings are making excessive or unusual noises, replace the blower assembly (includes motor and impeller).

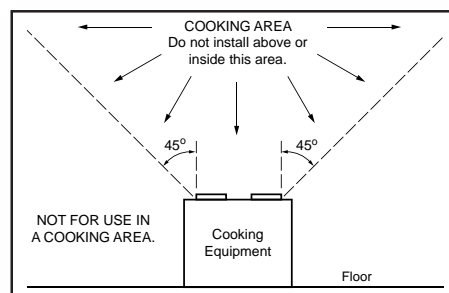
OPERATION

Use an on/off switch or speed control to operate this ventilator. See "Connect Wiring" for details.

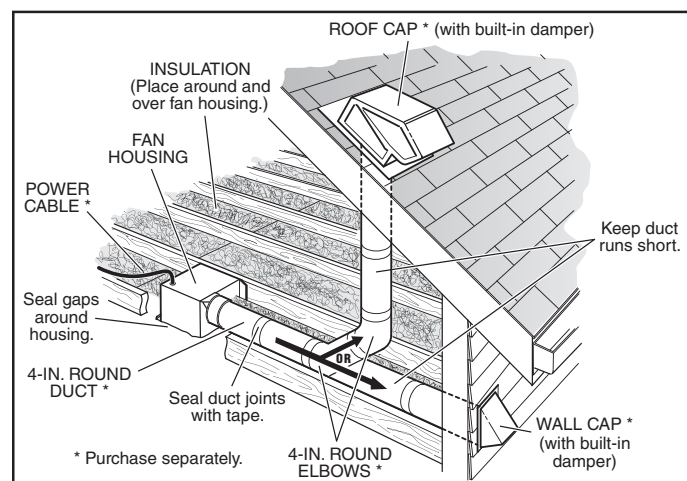
Installer: Leave this manual with the homeowner.

ALL INSTALLATIONS

Start here.

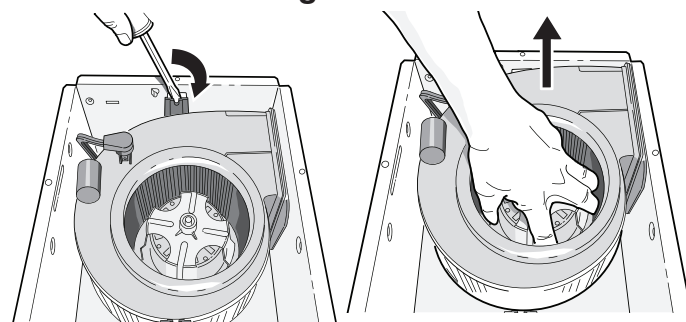


IMPORTANT - The ducting from this fan to the outside of the building has a strong effect on the air flow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated airflow.

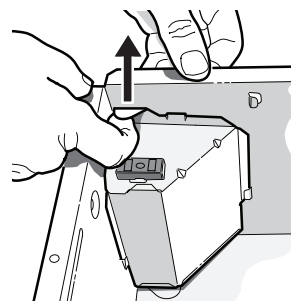


OPTION - To mount housing anywhere between ceiling framing: Use optional Hanger Bar Kit (sold separately from local distributors or website). Follow mounting instructions included with kit.

1. Remove blower and all packing material from fan housing.



2. Remove wiring panel from fan housing.



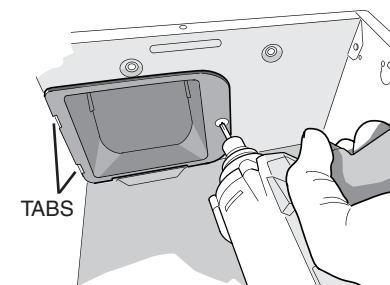
NEW CONSTRUCTION

For Retrofit Installation - Skip to back page.

3. Attach damper/duct connector to fan housing.

Push connector through opening from inside of housing.

Engage tabs and secure with screw from parts bag.



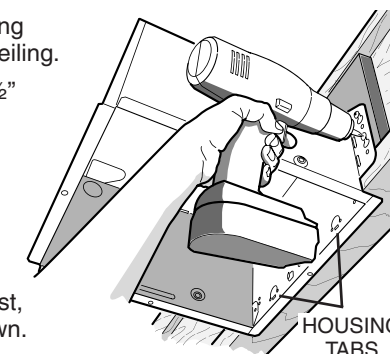
4. Mount housing to ceiling structure.

Make sure bottom of housing will be flush with finished ceiling.

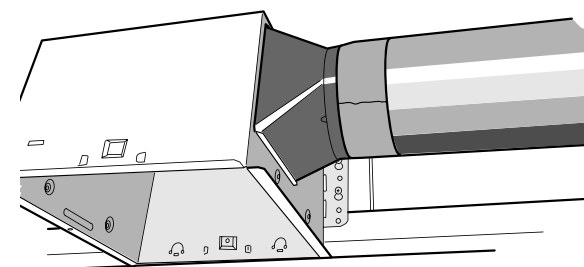
For proper location using 1/2" ceiling material: Bend out housing tabs to fit against bottom of structure.

Secure housing through mounting ears with appropriate fasteners.

If mounting housing to I-joist, use wood blocking as shown.

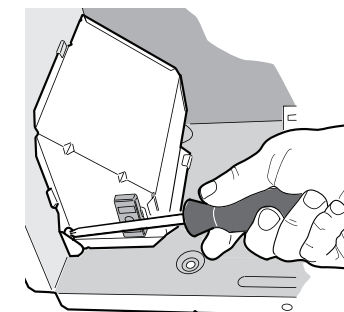
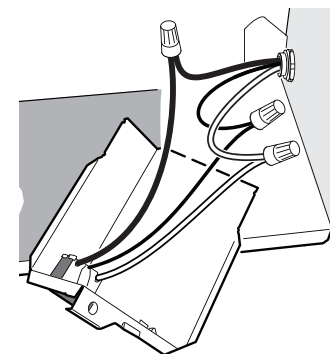
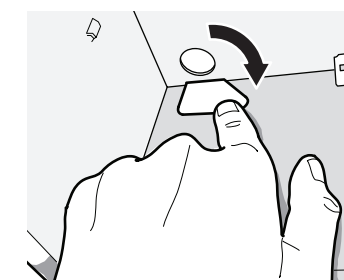


5. Connect 4-in. round duct.



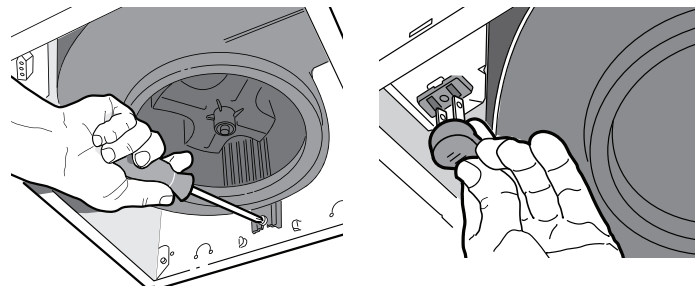
6. Connect wiring.

Bend tab to expose desired access hole. Connect power cable to housing with appropriate UL approved connector. Connect black to black, white to white and green to green or bare wire. Re-install wiring panel and secure with screw from parts bag.



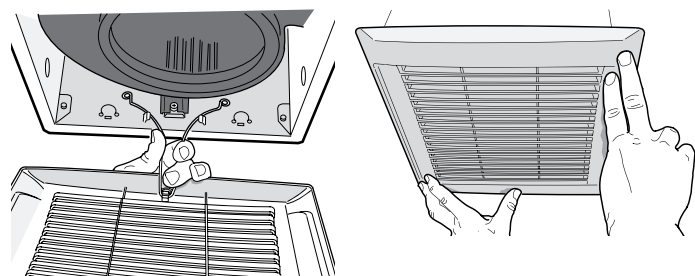
7. Install blower.

Re-install blower removed in Step 2. Secure blower with 2 screws from parts bag and plug blower into black receptacle.



8. Finish ceiling, then install grille.

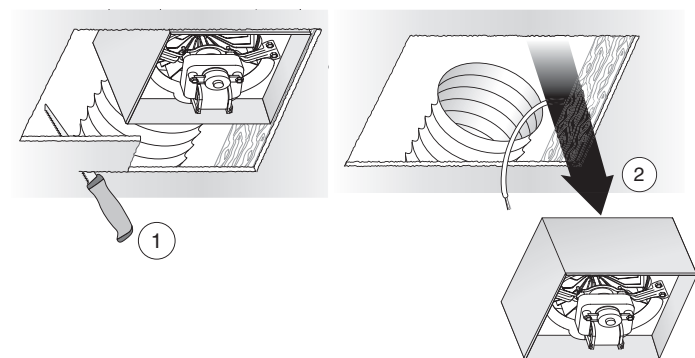
Squeeze grille springs and insert into slots in housing. Push grille up against ceiling.



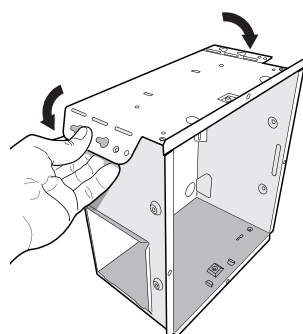
RETROFIT

3. Remove old fan.

Enlarge ceiling opening (if necessary) to 9 $\frac{3}{4}$ " parallel to joist by 10 $\frac{1}{2}$ " (perpendicular to joist). Leave ductwork and wiring in place.

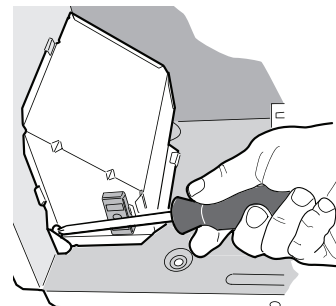
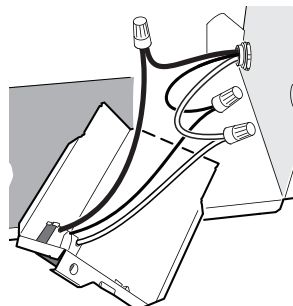


4. Fold mounting ears flat against housing.



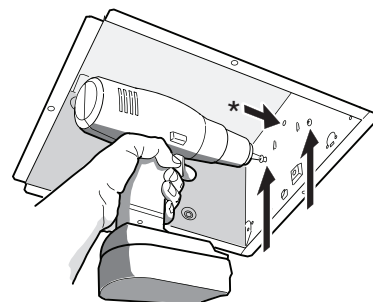
5. Connect wiring.

Bend tab to expose desired access hole. Connect power cable to housing with appropriate UL approved connector. Connect black to black, white to white and green to green or bare wire. Re-install wiring panel and secure with screw from parts bag.



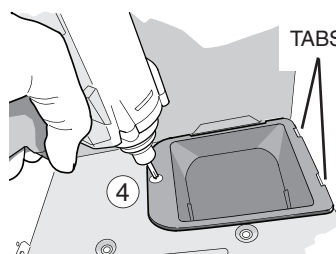
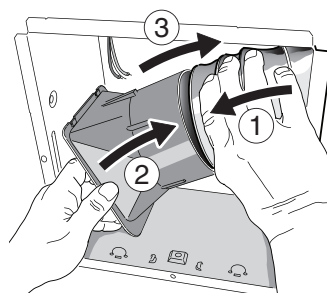
6. Mount fan to ceiling structure.

Mount housing to ceiling structure with standard drywall or wood screws in locations shown. *Center hole optional.



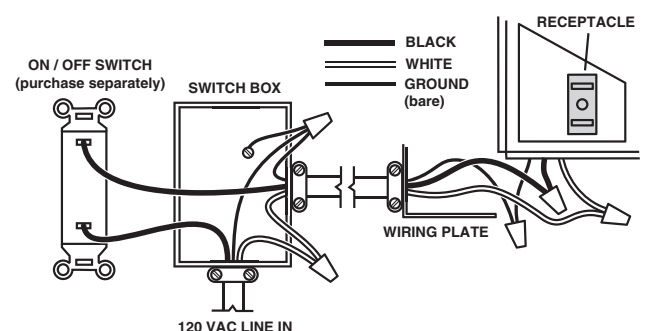
7. Connect 4-in. round duct.

Pull existing ducting through housing discharge opening and tape ducting to duct connector. Push connector/ducting back through opening. Engage tabs and secure with screw from parts bag.



Install blower. Finish ceiling, then install grille.
See Steps 7 & 8 at top of this page..

WIRING DIAGRAM



Limitation of Warranties and Claims

Seller warrants to the original purchaser that the goods sold hereunder shall be free from defects in workmanship and material under normal use and service (except in those cases where the materials are supplied by the buyer) for a period of one year from the date of original installation or eighteen (18) months from the date of shipment, whichever occurs first. The liability of seller under this warranty is limited to replacing, repairing, or issuing credit (at cost, F.O.B. factory and at seller's discretion) for any part or parts which are returned by buyer during such period provided that:

- seller is notified in writing within ten (10) days following discovery of such defects by buyer, or within ten (10) days after such defects should reasonably have been discovered, whichever is less;
- the defective unit is returned to seller, transportation charges prepaid by buyer;
- payment in full has been received by seller for said products;
- seller's examination of such unit shall disclose to its satisfaction that such defects have not been caused by misuse, neglect, improper installation, repair, alteration, act of God, or accident.

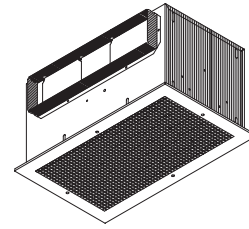
No warranty made hereunder shall extend to any seller product whose serial number is altered, effaced or removed. Seller makes no warranty, express or implied, with respect to motors, switches, controls, or other components of seller's product, where such components are warranted separately by their respective manufacturers. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable to buyer for indirect, incidental collateral, or consequential damages of any kind. (BUYER'S FAILURE TO PAY THE FULL AMOUNT DUE WITHIN SIXTY (60) DAYS OF DATE OF INVOICE SHALL OPERATE TO RELEASE SELLER FROM ANY AND ALL LIABILITY OR OBLIGATION ARISING PURSUANT TO ANY WARRANTY, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, MADE IN CONNECTION WITH ANY CONTRACT FORMED HEREUNDER. BUYER AGREES THAT SUCH FAILURE TO PAY SHALL CONSTITUTE A VOLUNTARY WAIVER OF ANY AND ALL SUCH WARRANTIES ARISING PURSUANT TO SUCH CONTACT.)



TWIN CITY FAN & BLOWER | WWW.TCF.COM

5959 Trenton Lane N | Minneapolis, MN 55442 |
Phone: 763-551-7600 | Fax: 763-551-7601

CEILING / WALL-MOUNT VENTILATORS • 120V



READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. To reduce the risk of fire, use only metal ductwork.
8. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Interrupter) - protected branch circuit.
9. Never place a switch where it can be reached from a tub or shower.
10. This unit must be grounded.

CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
3. Please read specification label on product for further information and requirements.

TABLE OF CONTENTS

This manual is divided into sections as follows:

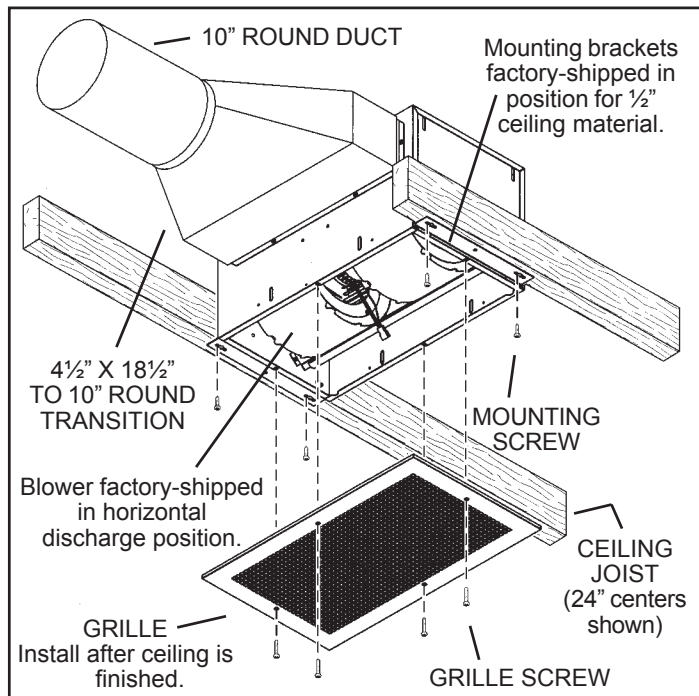
- **"TYPICAL INSTALLATION"**
This section shows a common installation in new and existing, frame construction.
 - Mounting (new construction)
 - Mounting (existing construction)
 - Wiring
 - Ducting (horizontal blower discharge)
- **"MOUNTING OPTIONS"**
- **"WIRING OPTIONS"**
 - Wiring Plate Position
- **"DUCTING OPTIONS"**
 - Blower Discharge Positions
 - Ducting (vertical blower discharge)
- **"USE AND CARE"**
- **"SERVICE PARTS"**
- **"WARRANTY"**

Installer: Leave this manual with the homeowner.

Homeowner: Use and Care information on page 3.

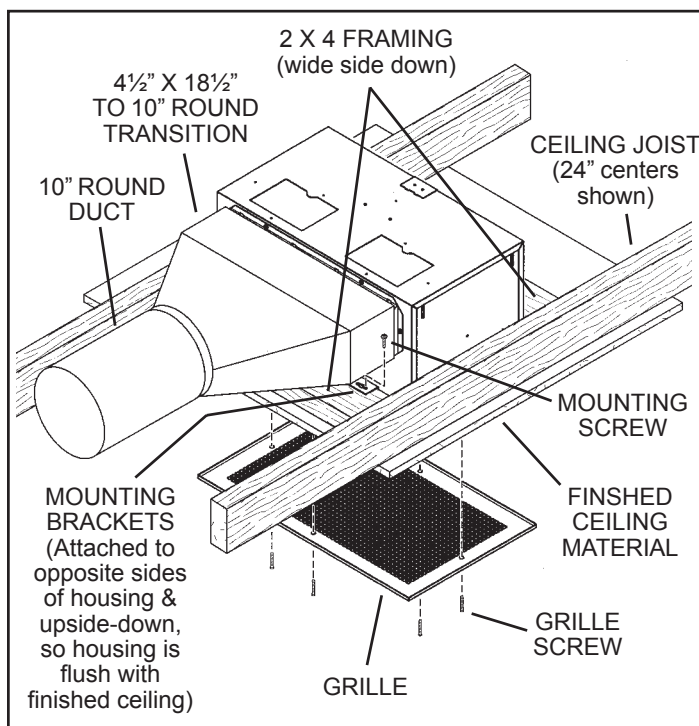
TYPICAL INSTALLATION

MOUNTING (*New Frame Construction*)



Factory-shipped unit installed in new construction.

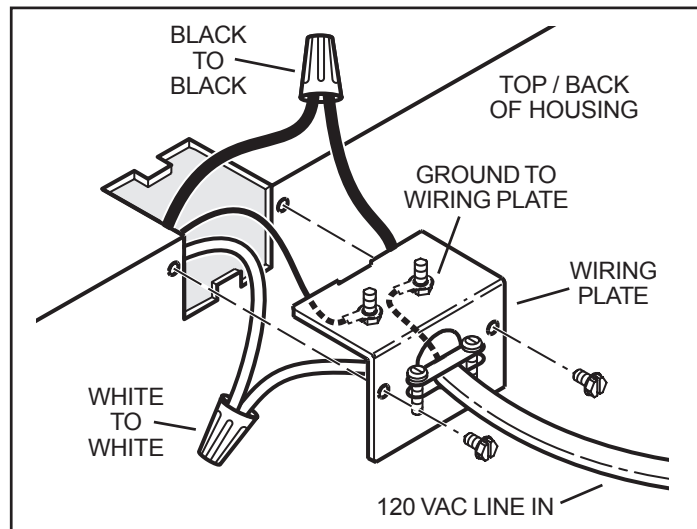
MOUNTING (*Existing Frame Construction*)



Factory-shipped unit installed in existing construction.

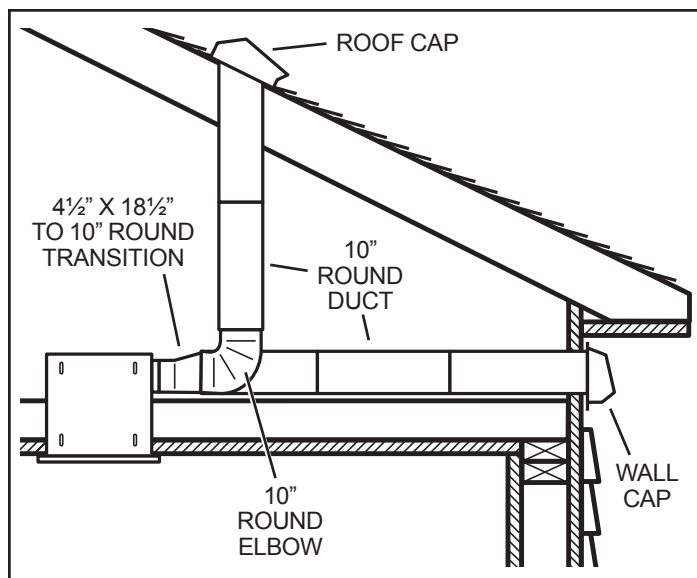
TYPICAL INSTALLATION

WIRING



*Ventilator can be wired from outside of housing.
Use UL approved connectors to wire per local codes.*

DUCTING (*Horizontal blower discharge*)

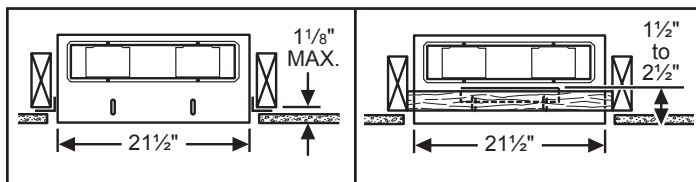


Two ways to connect ductwork to a factory-shipped unit.

NOTE: Make sure the shipping tape is removed from the damper flap and that damper flap opens and closes freely inside the ductwork. Use duct tape to make ductwork connections secure and air-tight.

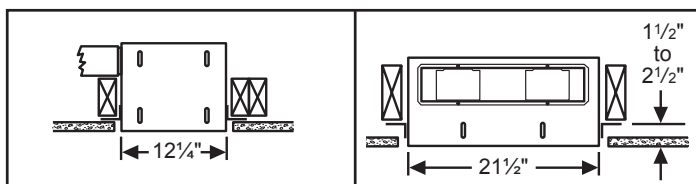
MOUNTING OPTIONS

¼-20 hex nuts secure mounting brackets to housing. Loosen and re-tighten or remove and replace nuts as necessary for desired mounting bracket position.



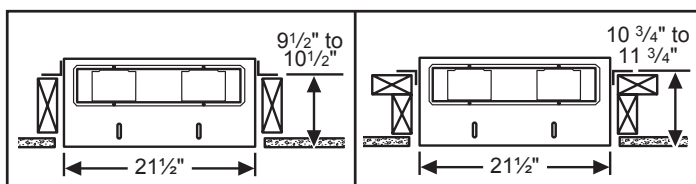
*Mounting brackets in factory-shipped position.
(Outlet parallel to joists.)
(New construction)*

*Mounting brackets flipped over and mounted to outlet sides of housing.
(Outlet parallel to joists.)
(Existing construction)*



*Mounting brackets mounted to outlet sides of housing.
(Outlet perpendicular to joists.)
(New construction)*

*Mounting brackets flipped over to give approx. 1" more clearance.
(Outlet parallel to joists.)
(New construction)*

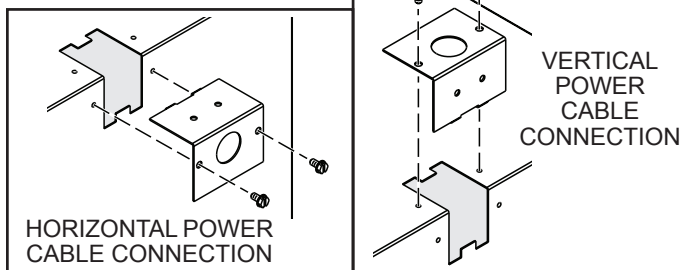


*Mounting brackets mounted to top sides of housing.
(Outlet parallel to joists.)
(New or existing construction)*

*Mounting brackets flipped over and mounted to top of sides of housing.
(Outlet parallel to joists.)
(New or existing construction)*

WIRING OPTIONS

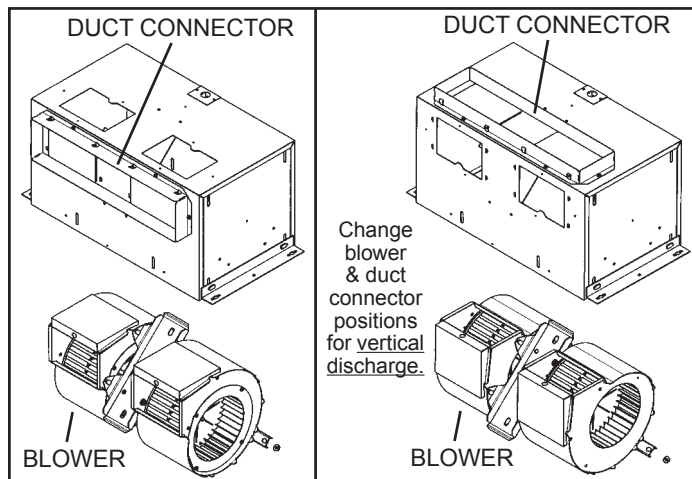
WIRING PLATE POSITION



Wiring plate mounts to side or top of housing.

DUCTING OPTIONS

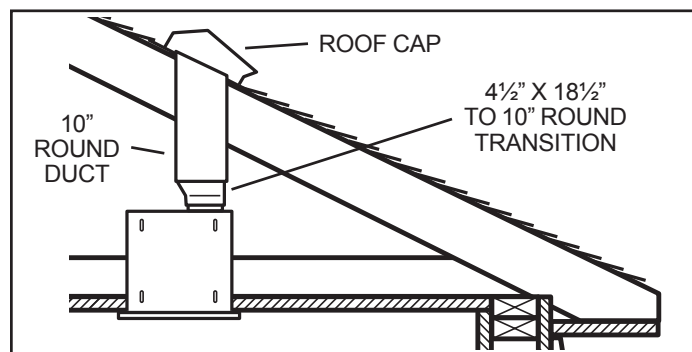
BLOWER DISCHARGE POSITIONS



*Blower and duct connector in horizontal discharge position
(factory shipped).*

Blower and duct connector in vertical discharge position.

DUCTING (Vertical blower discharge)



Typical ductwork connection to a ventilator converted to vertical discharge.

USE AND CARE

Ventilator is designed for continuous operation. If desired, it may be controlled using an on/off switch or a solid-state, variable speed control. Follow wiring instructions packed with control, and adhere to all local and state codes, and the National Electrical Code.



WARNING: To reduce the risk of electric shock, disconnect from power supply before servicing.

To clean grille: Use appropriate vacuum attachment or remove grille and clean with a soft cloth and mild soap or detergent. Dry grille thoroughly before reinstalling.

To clean blower assembly: Remove grille, unplug blower from housing, remove blower mounting nuts, and carefully remove blower from housing. Use appropriate vacuum attachment or a soft cloth and mild soap or detergent to clean blower discharge area and wheel. **DO NOT ALLOW WATER TO ENTER MOTOR.** Make sure blower assembly is completely dry before reinstalling.

Motor is permanently lubricated. Do not oil or disassemble motor.

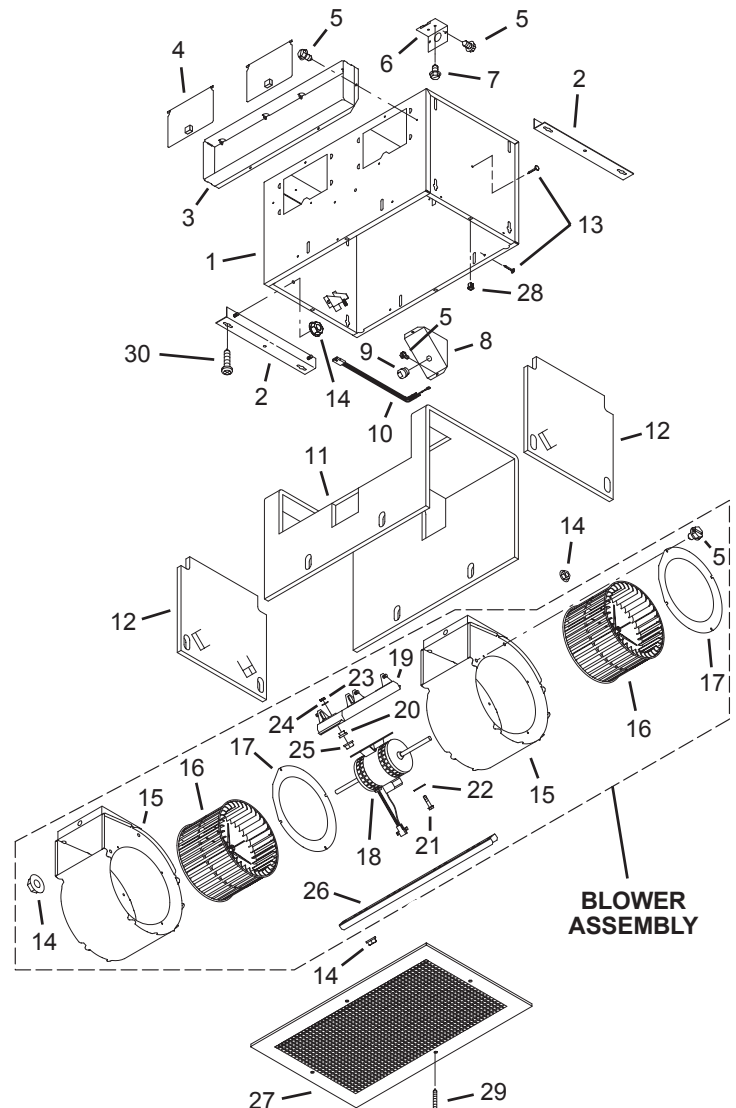
SERVICE PARTS

KEY NO.	PART NO.	DESCRIPTION
1	97014744	Housing Assembly
2	97014728	Mounting Bracket (2 req.)
3	98009449	Duct Connector
4	97014822	Damper Flap Assembly (2 req.)
5	99150415	Screw, 8-18 x 1/4 (18 req.)*
6	98005512	Wiring Plate
7	99150471	Ground Screw, 10-32 x 1/2 (2 req.)
8	98005513	Wire Box Cover
9	99400035	Strain Relief Bushing
10	97006039	Wire Harness
11	99500392	Wrapper Insulation
12	99500391	Side Insulation (2 req.)
13	99420466	Insulation Mounting Clip (6 req.)
14	99260477	Nut, 1/4-20 (12 req.)*
15	97014745	Scroll Assembly (2 req.)
16	99110805	Blower Wheel (2 req.)
17	98009399	Inlet Ring (2 req.)
18	99080486	Motor (T400)
	99080487	Motor (T500)
	99080488	Motor (T700)
19	97014794	Motor Mounting Bracket
20	99100497	Rubber Isolator (4 req.)
21	99160380	Screw, 10-24 x 7/8 (4 req.)*
22	99250399	Washer (4 req.)*
23	99260306	Nut, Hex 10-24 (4 req.)*
24	99250254	Washer (4 req.)*
25	93260456	Nut, Hex Flange 3/8-16
26	98009461	Scroll Mounting Channel
---	---	Blower Assembly, Complete (Includes Key Nos. 5 & 14-26)
	97014817	(T400)
	97014819	(T500)
	97014821	(T700)
27	98009463	Grille
28	99420470	Grille Nut (4 req.)
29	99150472	Grille Mounting Screw (4 req.)
30	99150591	Screw, 10-16 x 7/8 (4 req.)

Order replacement parts by PART NO. - not by KEY NO.
* Standard hardware - may be purchased locally.

SERVICE PARTS

Page 4



WARRANTY

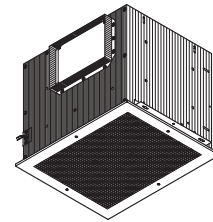
Limitation of Warranties and Claims

Seller warrants to the original purchaser that the goods sold hereunder shall be free from defects in workmanship and material under normal use and service (except in those cases where the materials are supplied by the buyer) for a period of one year from the date of original installation or eighteen (18) months from the date of shipment, whichever occurs first. The liability of seller under this warranty is limited to replacing, repairing, or issuing credit (at cost, F.O.B. factory and at seller's discretion) for any part or parts which are returned by buyer during such period provided that:

- seller is notified in writing within ten (10) days following discovery of such defects by buyer, or within ten (10) days after such defects should reasonably have been discovered, whichever is less;
- the defective unit is returned to seller, transportation charges prepaid by buyer.
- payment in full has been received by seller or said products; and
- seller's examination of such unit shall disclose to its satisfaction that such defects have not been caused by misuse, neglect, improper installation, repair, alteration, act of God, or accident.

No warranty made hereunder shall extend to any seller product whose serial number is altered, effaced or removed. Seller makes no warranty, express or implied, with respect to motors, switches, controls, or other components of seller's product, where such components are warranted separately by their respective manufacturers. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable to buyer for indirect, incidental collateral, or consequential damages of any kind. (BUYER'S FAILURE TO PAY THE FULL AMOUNT DUE WITHIN SIXTY (60) DAYS OF DATE OF INVOICE SHALL OPERATE TO RELEASE SELLER FROM ANY AND ALL LIABILITY OR OBLIGATION ARISING PURSUANT TO ANY WARRANTY, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, MADE IN CONNECTION WITH ANY CONTRACT FORMED HEREUNDER. BUYER AGREES THAT SUCH FAILURE TO PAY SHALL CONSTITUTE A VOLUNTARY WAIVER OF ANY AND ALL SUCH WARRANTIES ARISING PURSUANT TO SUCH CONTACT.)

CEILING / WALL-MOUNT VENTILATORS • 120V



READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed in the warranty.
2. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. To reduce the risk of fire, use only metal ductwork.
8. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Interrupter) - protected branch circuit.
9. Never place a switch where it can be reached from a tub or shower.
10. This unit must be grounded.

CAUTION

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
3. Please read specification label on product for further information and requirements.

Installer: Leave this manual with the homeowner.

Homeowner: Use and Care information on page 3.

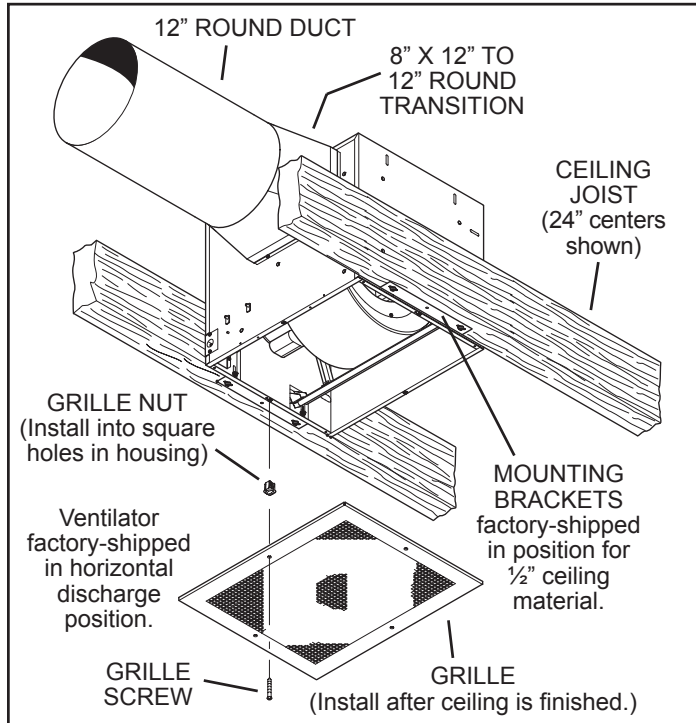
TABLE OF CONTENTS

This manual is divided into sections as follows:

- **"TYPICAL INSTALLATION"**
 - This section shows a common installation in new and existing, frame construction.
 - Mounting (new construction)
 - Mounting (existing construction)
 - Wiring
 - Ducting (horizontal blower discharge)
- **"MOUNTING OPTIONS"**
- **"WIRING OPTIONS"**
 - Wiring Plate Position
- **"DUCTING OPTIONS"**
 - Blower Discharge Positions
 - Ducting (vertical blower discharge)
- **"USE AND CARE"**
- **"SERVICE PARTS"**
- **"WARRANTY"**

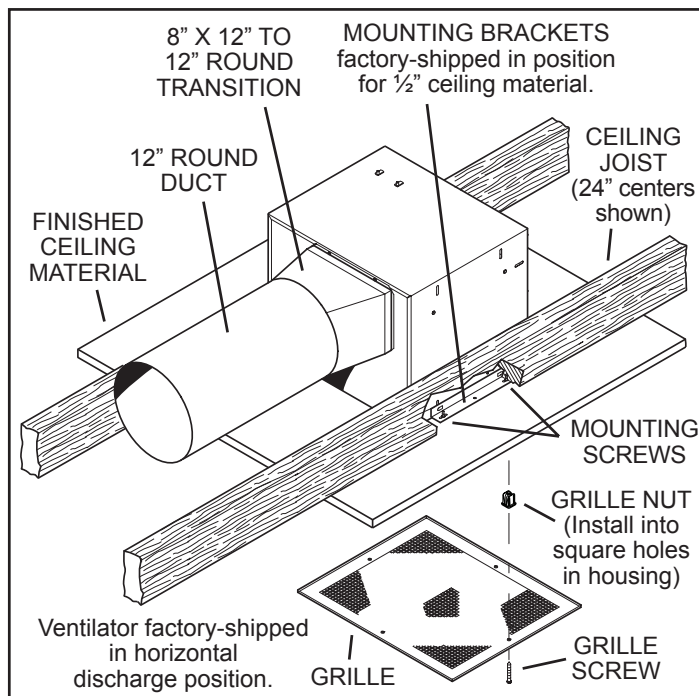
TYPICAL INSTALLATION

MOUNTING (New Frame Construction)



Factory-shipped unit installed in new construction.

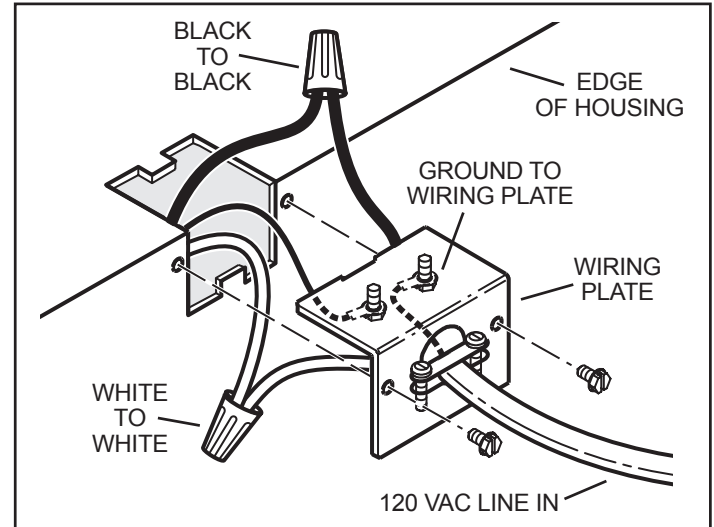
MOUNTING (Existing Frame Construction)



Factory-shipped unit installed in existing construction.

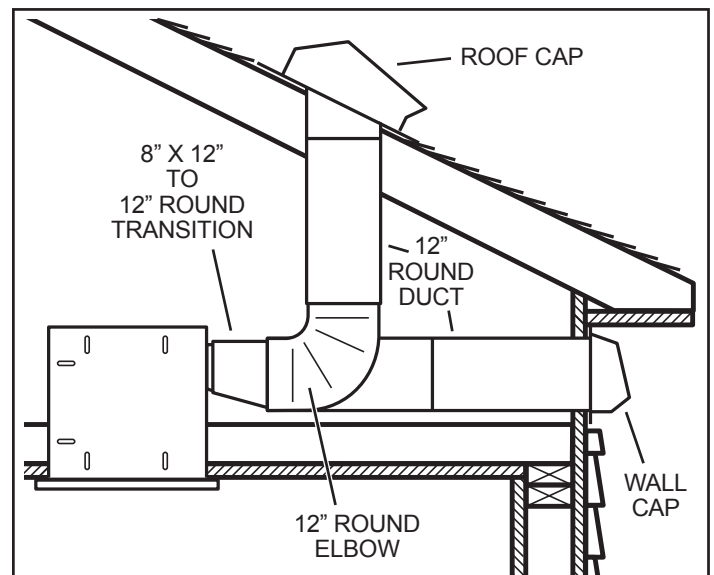
TYPICAL INSTALLATION

WIRING



*Ventilator can be wired from outside of housing.
Use UL approved connectors to wire per local codes.*

DUCTING (Horizontal blower discharge)



Two ways to connect ductwork to a factory-shipped unit.

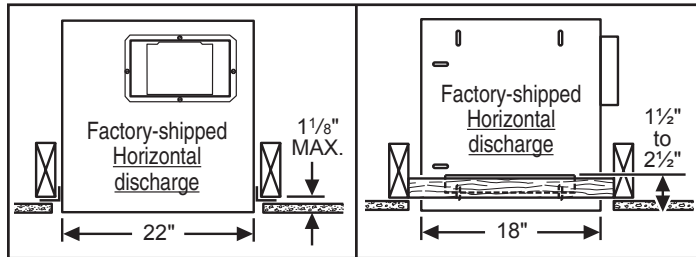
IMPORTANT:

Remove shipping tape from damper

Remove the shipping tape from the damper flap and make sure that damper flap opens and closes freely inside the ductwork. Use duct tape to make ductwork connections secure and air-tight.

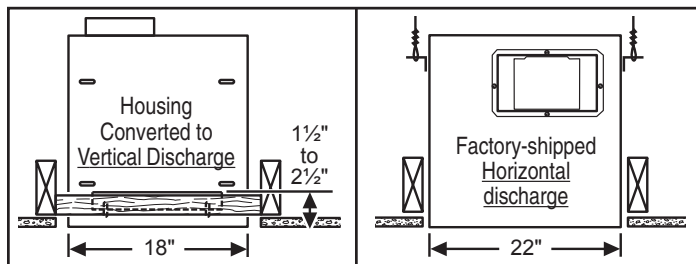
MOUNTING OPTIONS

¼-20 hex nuts secure mounting brackets to housing. Loosen and re-tighten or remove and replace nuts as necessary for desired mounting bracket position.



Mounting brackets in factory-shipped position, mounted directly to joists.
(Outlet parallel to joists.)
(New construction)

Mounting brackets flipped over and mounted to additional framing.
(Outlet perpendicular to joists.)
(New or Existing construction)

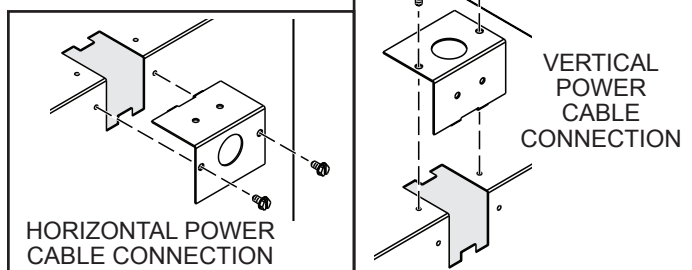


Mounting brackets flipped over and mounted to additional framing
(Outlet vertical.)
(New or Existing construction)

Mounting brackets flipped over and mounted to top of housing. Housing secured with cables.
(Outlet parallel to joists.)
(New or Existing construction)

WIRING OPTIONS

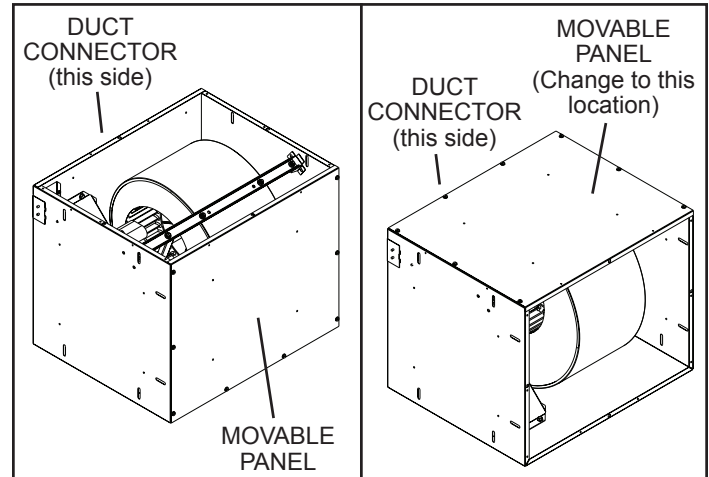
WIRING PLATE POSITION



Wiring plate mounts to side or top of housing.

DUCTING OPTIONS

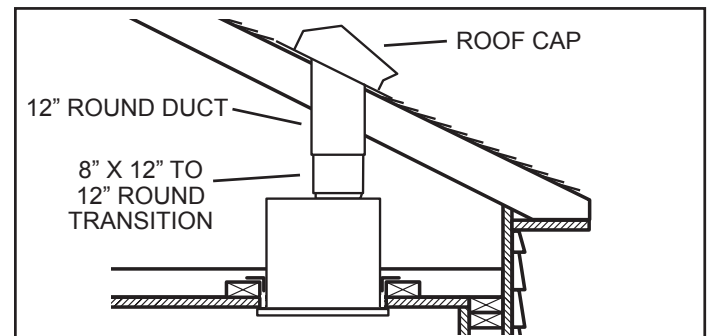
BLOWER DISCHARGE POSITIONS



Ventilator shown in horizontal discharge position (factory shipped).

Ventilator shown in vertical discharge position (change movable panel to new location as shown).

DUCTING (Vertical blower discharge)



Typical ductwork connection to a ventilator converted to vertical discharge.

USE AND CARE

Ventilator is designed for continuous operation. If desired, it may be controlled using an on/off switch or a solid-state, variable speed control. Follow wiring instructions packed with control, and adhere to all local and state codes, and the National Electrical Code.



WARNING: To reduce the risk of electric shock, disconnect from power supply before servicing.

To clean grille: Use appropriate vacuum attachment or remove grille and clean with a soft cloth and mild soap or detergent. Dry grille thoroughly before reinstalling.

To clean blower assembly: Remove grille, unplug blower from housing, remove blower mounting nuts, and carefully remove blower from housing. Use appropriate vacuum attachment or a soft cloth and mild soap or detergent to clean blower discharge area and wheel. **DO NOT ALLOW WATER TO ENTER MOTOR.** Make sure blower assembly is completely dry before reinstalling.

Motor is permanently lubricated. Do not oil or disassemble motor.

SERVICE PARTS

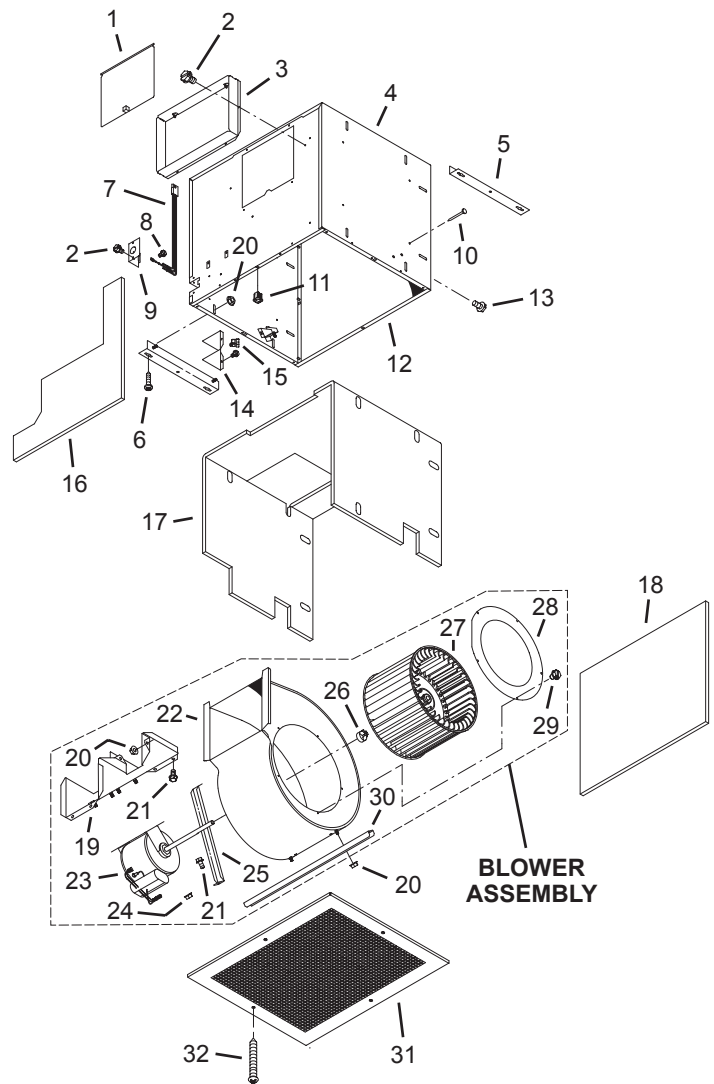
KEY NO.	PART NO.	DESCRIPTION
1	97014853	Damper Flap
2	99150415	Screw, #8B x 1/4" (10 req.)
3	98009520	Duct Connector
4	97014784	Housing Assembly
5	97014728	Mounting Bracket (2 req.)
6	99150591	Mounting Screw (4 req.)
7	97006142	Wiring Harness
8	99150471	Ground Screw, #10-32 x 1/2" (2 req.)
9	98005512	Wiring Adapter Plate
10	99420466	Insulation Mounting Clip (16 req.)
11	99420470	Grille Nut (4 req.)
12	98009518	Movable Housing Panel
13	93150487	Screw, #10-24 x .375" (8 req.)
14	98005513	Outlet Box Cover
15	99400035	Strain Relief Bushing
16	99500394	Insulation, Front
17	99500393	Insulation, Base
18	99500395	Insulation, Back
19	97014788	Motor Bracket
20	99260477	Whiz Nut, 1/4-20" (11 req.)
21	99200202	Screw, 1/4-20 x 1/2" (5 req.)
22	97014785	Blower Scroll
23	99080490	Motor (T900)
	99080491	Motor (T1500)
24	93260447	Nut, Hex Flange 5/16-18" (5 req.)
25	98009516	Support Bracket
26	99680019	Wheel Clamp
27	99020274	Blower Wheel (includes Key No. 26)
28	98009514	Inlet Ring
29	99150417	Screw, #8-18 x 1/4" (5 req.)
30	98009513	Scroll Support Channel
+	97014848	Blower Assembly Complete (T900) (Includes Key Nos. 19 thru 30)
+	97014849	Blower Assembly Complete (T1500) (Includes Key Nos. 19 thru 30)
31	98009522	Grille
32	99150472	Grille Screw (4 req.)

Order replacement parts by PART NO. - not by KEY NO.

* Standard hardware - may be purchased locally.

+ Not shown assembled.

SERVICE PARTS



WARRANTY

Limitation of Warranties and Claims

Seller warrants to the original purchaser that the goods sold hereunder shall be free from defects in workmanship and material under normal use and service (except in those cases where the materials are supplied by the buyer) for a period of one year from the date of original installation or eighteen (18) months from the date of shipment, whichever occurs first. The liability of seller under this warranty is limited to replacing, repairing, or issuing credit (at cost, F.O.B. factory and at seller's discretion) for any part or parts which are returned by buyer during such period provided that:

- seller is notified in writing within ten (10) days following discovery of such defects by buyer, or within ten (10) days after such defects should reasonably have been discovered, whichever is less;
- the defective unit is returned to seller, transportation charges prepaid by buyer.
- payment in full has been received by seller or said products; and
- seller's examination of such unit shall disclose to its satisfaction that such defects have not been caused by misuse, neglect, improper installation, repair, alteration, act of God, or accident.

No warranty made hereunder shall extend to any seller product whose serial number is altered, effaced or removed. Seller makes no warranty, express or implied, with respect to motors, switches, controls, or other components of seller's product, where such components are warranted separately by their respective manufacturers. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall seller be liable to buyer for indirect, incidental collateral, or consequential damages of any kind. (BUYER'S FAILURE TO PAY THE FULL AMOUNT DUE WITHIN SIXTY (60) DAYS OF DATE OF INVOICE SHALL OPERATE TO RELEASE SELLER FROM ANY AND ALL LIABILITY OR OBLIGATION ARISING PURSUANT TO ANY WARRANTY, EXPRESS OR IMPLIED, WHETHER STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, MADE IN CONNECTION WITH ANY CONTRACT FORMED HEREUNDER. BUYER AGREES THAT SUCH FAILURE TO PAY SHALL CONSTITUTE A VOLUNTARY WAIVER OF ANY AND ALL SUCH WARRANTIES ARISING PURSUANT TO SUCH CONTACT.)